

**OTAY RANCH
VILLAGE 2, VILLAGE 3, PORTION OF VILLAGE 4 SPA
PLAN
PUBLIC FACILITIES FINANCE PLAN**

**Approved by:
Chula Vista City Council
Date: May 23, 2006
Resolution No. 2006-156**

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February 28, 2006

Table of Contents

Sections	Pages
II.5.1 EXECUTIVE SUMMARY	1
A. General Conditions for Otay Ranch Villages 2, 3 and a Portion of Village 4 PFFP.	3
B. Public Facility Cost and Fee Summary for Proposed Project	4
II.5.2 INTRODUCTION	8
II.5.2.1 Overview	8
II.5.2.2 Purpose	8
II.5.2.3 Growth Management Threshold Standards	8
II.5.2.4 The Project.....	9
II.5.2.5 Public Facilities Finance Plan Boundaries	9
II.5.3 LAND USE ASSUMPTIONS	13
II.5.3.1 Purpose	13
II.5.3.2 Existing Development	13
II.5.3.3 Development Phasing Forecast	14
II.5.3.4 Project Development Summary.....	14
II.5.3.5 Development Phasing	18
II.5.3.6 Development Impact Fee Program	22
II.5.4 FACILITY ANALYSIS.....	24
II.5.4.1 TRAFFIC	25
II.5.4.1.1 GMOC Threshold Standard.....	25
II.5.4.1.2 GMOC Level Of Service (LOS) Definition	25
II.5.4.1.3 Freeway Segment LOS Standards and Thresholds.	26
II.5.4.1.4 Roadway Segment LOS Standards and Thresholds	26
II.5.4.1.5 Intersection LOS Standards and Threshold	27
II.5.4.1.5.1 Signalized Intersection Analysis	28
II.5.4.1.5.2 Unsignalized Intersection Analysis.....	29
II.5.4.1.6 Chula Vista Traffic Monitoring Program (TMP)	29
II.5.4.1.7 Service Analysis.....	30
II.5.4.1.8 Project Processing Requirements	35
II.5.4.1.9 Existing Conditions	35
II.5.4.1.10 Transit.....	40
II.5.4.1.11 Trip Generation and Phasing.....	43
II.5.4.1.11.1 Project Trip Generation.....	43
II.5.4.1.11.4 Project Phasing.....	47
II.5.4.1.12 Adequacy Analysis.....	51
II.5.4.1.13 Cost & Financing Project Traffic Improvements	55
II.5.4.1.14 Threshold Compliance and Requirements for Project & Alternatives	58

II.5.4.2	POLICE	61
II.5.4.2.1	Threshold Standard.....	61
II.5.4.2.2	Service Analysis.....	61
II.5.4.2.3	Project Processing Requirements	61
II.5.4.2.4	Existing Conditions	61
II.5.4.2.5	Adequacy Analysis.....	62
II.5.4.2.6	Financing Police Facilities	63
II.5.4.2.7	Threshold Compliance and Recommendations	64
II.5.4.3	FIRE AND EMERGENCY MEDICAL SERVICES	65
II.5.4.3.1	Threshold Standard.....	65
II.5.4.3.2	Service Analysis.....	65
II.5.4.3.3	Project Processing Requirements	65
II.5.4.3.4	Existing Conditions	66
II.5.4.3.5	Adequacy Analysis.....	66
II.5.4.3.6	Financing Fire Service Facilities	67
II.5.4.3.7	Threshold Compliance and Recommendations	68
II.5.4.4	SCHOOLS	70
II.5.4.4.1	Threshold Standard.....	70
II.5.4.4.2	Service Analysis.....	70
II.5.4.4.3	Project Processing Requirements	71
II.5.4.4.4	Existing Conditions	71
II.5.4.4.5	School Sizing and Location.....	74
II.5.4.4.6	Financing School Facilities	75
II.5.4.4.7	Threshold Compliance and Recommendations	77
II.5.4.5	LIBRARIES.....	78
II.5.4.5.1	Threshold Standard.....	78
II.5.4.5.2	Service Analysis.....	78
II.5.4.5.3	Project Processing Requirements	78
II.5.4.5.4	Existing Conditions	78
II.5.4.5.5	Adequacy Analysis.....	78
II.5.4.5.6	Financing Library Facilities	80
II.5.4.5.7	Threshold Compliance and Recommendations	81
II.5.4.6	PARKS, TRAILS AND OPEN SPACE	82
II.5.4.6.1	Park Threshold Standard	82
II.5.4.6.2	Service Analysis.....	82
II.5.4.6.3	Project Processing Requirements	82
II.5.4.6.4	Existing Conditions	82
II.5.4.6.5	Project Park Requirements	82
II.5.4.6.6	Park Adequacy Analysis	84
II.5.4.6.7	Open Space, Trails and Recreation	86
II.5.4.6.8	Financing Park, Open Space, and Trail Facilities	88
II.5.4.6.8.1	SPA Plan	88
II.5.4.6.9	Financing Recreation Facilities.....	89
II.5.4.6.10	Threshold Compliance and Recommendations.....	91

II.5.4.7	WATER	94
II.5.4.7.1	Threshold Standard.....	94
II.5.4.7.2	Service Analysis.....	94
II.5.4.7.3	Project Processing Requirements	95
II.5.4.7.4	Existing Conditions	95
II.5.4.7.5	Adequacy Analysis.....	96
II.5.4.7.6	Existing Facilities.....	99
II.5.4.7.7	Proposed Facilities	101
II.5.4.7.8	Financing Water Facilities.....	102
II.5.4.7.9	Threshold Compliance and Recommendations.....	103
II.5.4.8	SEWER.....	106
II.5.4.8.1	Threshold Standard.....	106
II.5.4.8.2	Service Analysis.....	106
II.5.4.8.3	Project Processing Requirements	106
II.5.4.8.4	Existing Conditions	107
II.5.4.8.5	Adequacy Analysis.....	107
II.5.4.8.6	Recommended Sewerage Facilities	114
II.5.4.8.6.1	Improvements.....	114
II.5.4.8.6.2	Phasing.....	115
II.5.4.8.7	Financing Sewerage Facilities.....	116
II.5.4.8.8	Threshold Compliance and Recommendations	118
II.5.4.9	DRAINAGE	120
II.5.4.9.1	Threshold Standard.....	120
II.5.4.9.2	Service Analysis.....	120
II.5.4.9.3	Project Processing Requirements	121
II.5.4.9.4	Existing Conditions	121
II.5.4.9.5	Proposed Facilities	123
II.5.4.9.6	Financing Drainage Facilities.....	126
II.5.4.9.7	Threshold Compliance and Recommendations	126
II.5.4.10	AIR QUALITY.....	129
II.5.4.10.1	Threshold Standard	129
II.5.4.10.2	Service Analysis.....	129
II.5.4.10.3	Threshold Compliance and Recommendations.....	129
II.5.4.11	CIVIC CENTER.....	131
II.5.4.11.1	Threshold Standard	131
II.5.4.11.2	Service Analysis.....	131
II.5.4.11.3	Existing Conditions.....	131
II.5.4.11.4	Adequacy Analysis	132
II.5.4.11.5	Financing Civic Center Facilities.....	132
II.5.4.11.6	Threshold Compliance and Recommendations.....	133
II.5.4.12	CORPORATION YARD	134
II.5.4.12.1	Threshold Standard	134
II.5.4.12.2	Service Analysis.....	134
II.5.4.12.3	Existing Conditions.....	134
II.5.4.12.4	Adequacy Analysis	134

II.5.4.12.5	Financing Corporation Yard Facilities.....	134
II.5.4.12.6	Threshold Compliance and Recommendations.....	135
II.5.4.13	OTHER PUBLIC FACILITIES	136
II.5.4.13.1	Threshold Standard	136
II.5.4.13.2	Service Analysis.....	136
II.5.4.13.3	Existing Conditions.....	136
II.5.4.13.4	Financing Other Public Facilities.....	136
II.5.4.13.6	Threshold Compliance and Recommendations.....	137
II.5.4.14	FISCAL ANALYSIS.....	138
II.5.4.14.1	Threshold Standard	138
II.5.4.14.2	Facility Master Plan	138
II.5.4.14.3	Project Processing Requirements	138
II.5.4.14.4	Fiscal Analysis of Project	138
II.5.4.14.4.1	Introduction.....	138
II.5.4.14.4.2	Project Description	139
II.5.4.14.4.3	Project Demographics and Land Uses	139
II.5.4.14.4.4	Revenues.....	140
II.5.4.14.4.5	Operating Expenditures	144
II.5.4.14.4.6	Net Fiscal Impact.....	149
II.5.4.15	PUBLIC FACILITY FINANCE.....	151
II.5.4.15.1	Overview.....	151
II.5.4.15.2	Subdivision Exactions.....	151
II.5.4.15.3	Development Impact Fee Programs.....	151
II.5.4.15.4	Debt Finance Programs.....	152
II.5.4.15.5	Other Methods Used to Finance Facilities.....	153
II.5.4.15.6	Public Facility Finance Policies.....	154
II.5.4.15.7	Cumulative Debt	155
II.5.4.15.8	Lifecycle Cost.....	157
APPENDIX	159
Appendix A	Fiscal Impact Analysis Tables	

List of Exhibits

No.	Title	Page
Exhibit 1	Regional Location Map	11
Exhibit 2	Vicinity Map	12
Exhibit 3	Village 2 & 4 Site Utilization Plan	15
Exhibit 4	Village 3 & Planning Area 18b Site Utilization Plan	16
Exhibit 5	Conceptual Phasing Plan	17
Exhibit 6	Streets & Intersections w/ current ADT's	39
Exhibit 7	Public Transportation Concept Plan	42
Exhibit 8	Circulation Plan	45
Exhibit 9	PFFP Roadways	48
Exhibit 10	Project Inbound Distribution from Olympic Parkway	50
Exhibit 11	Parks and Open Space Plan	92
Exhibit 12	Trails Plan	93
Exhibit 13	Proposed Water Facilities	104
Exhibit 14	Proposed Recycled Water Facilities	105
Exhibit 15	Proposed Onsite Sewer Facilities	119
Exhibit 16	Proposed Drainage Facilities	128

List of Tables

Table No.	Title	Page
Table A.1	Summary of City DIF Fees by Phase and Facility	5
Table A.2	Timing and Funding Source by Facility	6
Table B.1	Five year Residential unit Growth Forecast 2005-2009	14
Table B.2	Phasing Plan Summary	18
Table B.3	Phasing Plan	20
Table B.4	EDUs by Phase for Transportation	22
Table B.5	Public Facilities DIF Components	23
Table B.6	Level of Analysis	24
Table C.1	GMOC LOS Definition	25
Table C.2	Caltrans District 11 Freeway Segment LOS Definitions	26
Table C.3	Segment Capacity and LOS Standards	27
Table C.4	Street Segment LOS Threshold Descriptions	27
Table C.5	LOS Thresholds for Signalized Intersections	28
Table C.6	Intersection LOS Threshold Description	28
Table C.7	LOS Thresholds for Unsignalized Intersections	29
Table C.8	Telegraph Canyon Road (Class II) Existing TMP Speeds and LOS Conditions	34
Table C.8	Trip Generation	43
Table C.10	Internal Trips for Assumed Project	44
Table C.11	ADT Phasing Summary	44
Table C.12	Project Phasing	46
Table C.13	Traffic Improvement Thresholds and Costs	55
Table C.14	Phasing EDUs for Transportation Facilities	56
Table C.15	TDIF Fees	57
Table C.16	Traffic Signal Fees	57
Table C.17	PFFP Impacts and Mitigation Measures	59
Table D.1	Police Historic Response Times	62
Table D.2	Public Facilities Fees For Police	63
Table E.1	Fire Station Inventory	66
Table E.2	Fire/EMS –Emergency Response Times since 1994	67
Table E.3	Public Facilities Fees For Fire	68
Table F.1	Chula Vista Elementary School District Enrollments vs. Capacity	72
Table F.2	Sweetwater Union High School District High School Enrollments vs. Permanent Capacity	73
Table F.3	Sweetwater Union High School District 2004-2008 Planned Schools	74
Table F.4	Student Generation by Development Phase	74
Table G.1	Existing Library Facilities	78

No.	Title.....	Page
Table G.2	Future Library Facilities	79
Table G.3	Library Space Demand Compared to Supply	80
Table G.4	Public Facilities Fees For Libraries.....	80
Table H.1	Quimby Act Parkland Requirements.....	83
Table H.2	Parkland Dedication Ordinance Standards	83
Table H.3	Parkland Dedication Requirements per City Ordinance.....	83
Table H.4	SPA Plan Park Acres and Eligible Credits	84
Table H.5	Park Acreage Demand Compared to Supply East of Interstate 805 as of December 2004.....	85
Table H.6	Village 2, 3, Portion of Village 4 SPA Park Supply by Phase	85
Table H.7	Park Acquisition and Development (PAD) Fees Development Component Only	88
Table H.8	Park Acquisition and Development (PAD) Fees Acquisition Component Only	89
Table H.9	Public Facilities Fees For Recreation	91
Table I.1	Water Duty Factors.....	96
Table I.2	Potable Water Demands	97
Table I.3	Projected Recycled Water Demands	99
Table J.1	Sewerage Generation Factors	107
Table J.2	Sewer Capacity used by forecasted development.....	107
Table J.3	Wastewater flow Projections	109
Table J.4	Poggi Canyon Sewer Basin EDU Projection.....	111
Table J.5	Poggi Canyon Sewer Basin Proposed New Development Projections.....	111
Table J.6	Poggi Canyon Interceptor Capacity Threshold Analysis.....	112
Table J.7	Poggi Canyon Interceptor Capacity Threshold Summary	113
Table J.8	Salt Creek Interceptor EDU Projections from 11/94 Study.....	113
Table I.9	Salt Creek EDU Projections from Current Land Use Plan.....	113
Table J.10	Poggi Canyon Interceptor Pumped Flow Analysis Summary	115
Table J.11	Poggi Canyon Basin Impact Fees.....	116
Table J.12	Poggi Canyon Basin Impact Fees for Project.....	117
Table J.13	Salt Creek Basin Impact Fees.....	117
Table J.14	Salt Creek Basin Impact Fees for Project.....	118
Table K.1	Summary of Wolf Canyon Creek Pre-Development Area	123
Table K.2	Existing and Developed Conditions and 100-Year flows.....	123
Table K.3	Summary of Peak 100-Year Flows.....	124

No.	Title.....	Page
Table L.1	Civic Facilities Inventory	131
Table L.2	Future Facilities Cost.....	131
Table L.3	Civic Center Fee for Otay Ranch Village 2, 3, Portion of Village 4 SPA.....	132
Table M.1	Corporate Yard Fee for Otay Ranch Village 2, 3, Portion of Village 4 SPA.....	135
Table N.1	Public Facilities Fees For Other Public Facilities	137
Table O.1	Absorption Schedule and Market Values by Land Use.....	139
Table O.2	Fiscal Impact General Assumptions	140
Table O.3	Fiscal Impact Revenue Generation Assumptions	141
Table O.4	Project Fiscal Impact Cost Allocation Assumptions	145
Table O.5	Per Unit Allocations for Police Service.....	147
Table O.6	Net Fiscal Impact of the Project on the City of Chula Vista	150
Table P.1	Estimated Revenue Available for Debt Service on Land Secured Financings.....	155
Table P.2	Estimate of Facilities Cost Potentially funded from Debt Service	156

II.5.1 EXECUTIVE SUMMARY

OVERVIEW

This Public Facility Finance Plan (PFFP) addresses the public facility needs associated with the Otay Ranch Village 2, 3, and a Portion of Village 4 Sectional Planning Area (SPA) Plan. The developer proposed project as described in the SPA Plan is sometimes referred to as “The Project” in this PFFP. The PFFP has been prepared under the requirements of the City of Chula Vista’s Growth Management Program and Chapter 9, Growth Management of the Otay Ranch General Development Plan (GDP). The preparation of the PFFP is required in conjunction with the preparation of the SPA Plan for the project to ensure that the phased development of the project is consistent with the overall goals and policies of the City’s General Plan, Growth Management Program, and the Otay Ranch General Development Plan (GDP) which was adopted by the Chula Vista City Council on October 28, 1993, to ensure that the development of the project will not adversely impact the City’s Quality of Life Standards. This PFFP meets the policy objectives of the Otay Ranch GDP.

This PFFP is based upon the phasing and project information that has been presented in the *Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Plan* dated January 24, 2005, as amended. The PFFP begins by analyzing the existing demand for facilities based upon the demand from existing development and those projects with various entitlements through the year 2010. Further, the PFFP uses the phasing as proposed by the project to determine the associated impacts.

When specific thresholds are projected to be reached or exceeded based upon the analysis of the phased development of the project, the PFFP provides recommended mitigation necessary for continued compliance with the Growth Management Program and Quality of Life Standards. The PFFP does not propose different development phasing from that proposed by the project or alternative plans, but may indicate that the development phasing should be limited or reduced until certain actions are taken to guarantee public facilities will be available or provided to meet the Quality of Life Standards. Subsequent changes to the phasing shall require an amendment to this PFFP.

Typically, as an applicant receives each succeeding development approval, the applicant must perform the required steps that will insure the timely provision of the required facility. Failure to perform the required step curtails additional development approvals. The typical steps are illustrated below:

Performance of Facility Thresholds

GDP:

- Goals, objectives & policies established.
- Facility thresholds established.
- Processing requirements established.

SPA:

- Facility financing refined and funding source identified consistent with GDP goals, objectives & policies.

- Facility demand and costs calculated consistent with adopted land uses and GDP defined methodologies.
- Specific facility financing and phasing analysis performed to assure compliance with Growth Management Thresholds.
- Facilities sited and zoning identified.

Tentative Map:

- Subdivision approval conditioned upon assurance of facility funding.
- Subdivision approval conditioned upon payment of fees, or the dedication, reservation or zoning of land for identified facilities.
- Subdivision approval conditioned upon construction of certain facility improvements.

Final Map:

- Tentative Map conditions performed.
- Lots created.

Building Permit:

- Impact fees paid as required.

The critical link between the thresholds and development entitlements is the PFFP. Part II, Chapter 9, Section C of the GDP/SPA Processing Requirements, General Development Plan Implementation, requires the preparation of Public Facility Financing and Phasing Plans as a condition of approval of all SPAs. This PFFP satisfies the GDP requirement. The PFFP requires the preparation and approval of phasing schedules showing how and when facilities and improvements necessary to serve proposed development will be installed or financed to meet the threshold standards, including:

- An inventory of present and future requirements for each facility.
- A summary of facilities cost.
- A facility phasing schedule establishing the timing for installation or provisions of facilities.
- A financing plan identifying the method of funding for each facility required.
- A fiscal impact report analyzing SPA consistency with the Subregional Plan (SRP).

Subsection C of the City of Chula Vista Municipal Code (CVMC) Section 19.09.100 (Growth Management Ordinance) requires that if the City Manager determines that facilities or improvements within a PFFP are inadequate to accommodate any further development within that area the City Manager shall immediately report the deficiency to the City Council. If the City Council determines that such events or changed circumstances adversely affect the health, safety or welfare of City, the City may require amendment, modification, suspension, or termination of an approved PFFP.

A. GENERAL CONDITIONS FOR VILLAGES 2, 3, PORTION OF VILLAGE 4 SPA PFFP

1. All development within the boundaries of the PFFP for the project shall conform to the provisions of Section 19.09 of the Chula Vista Municipal Code (Growth Management Ordinance) as may be amended from time to time and to the provisions and conditions of this Public Facilities Financing Plan.
2. All development within the boundaries of the PFFP for the project shall be required to pay development impact fees, unless the developer has entered into a separate agreement with the City, for public facilities, transportation and other applicable fees pursuant to the most recently adopted program by the City Council, and as amended from time to time. Development within the boundaries of the Otay Ranch Village 2, 3, portion of Village 4 SPA shall also be responsible for fair share proportionate fees that are necessary to meet the adopted facility performance standards as they relate to the SPA Plan and subdivision application.
3. The Public Facilities Finance Plan shall be implemented in accordance with Chula Vista Municipal Code (CVMC) 19.09.090. Future amendments shall be in accordance with CVMC 19.09.100 and shall incorporate newly acquired data, to add conditions and update standards as determined necessary by the City through the required monitoring program. Amendment to this Plan may be initiated by action of the Planning Commission, City Council or property owners at any time. Any such amendments must be approved by the City Council.
4. Approval of this PFFP does not constitute prior environmental review for projects within the boundaries of this Plan. All future projects within the boundaries of this PFFP shall undergo environmental review as determined appropriate by the City of Chula Vista.
5. Approval of this PFFP does not constitute prior discretionary review or approval for projects within the boundaries of the Plan. All future projects within the boundaries of the Otay Ranch Village 2, 3, portion of Village 4 SPA PFFP shall undergo review in accordance with the Chula Vista Municipal Code. This PFFP analyzes the maximum allowable development potential for planning purposes only. The approval of this plan does not guarantee specific development densities.
6. The facilities and phasing requirements identified in this PFFP are based on the City Council proposed Project Site Utilization Plan.
7. The plan analysis is based upon the phasing presented in this document. Changes to phasing may require an amendment to the PFFP.

B. PUBLIC FACILITY COST AND FEE SUMMARY OTAY RANCH VILLAGE 2, 3, AND A PORTION OF VILLAGE 4 SPA

The following tables identify and summarize the various facility costs associated with development of the project. The facilities and their costs are identified in detail in subsequent sections of this document. The tables indicate a recommended financing alternative based upon current Chula Vista practices and policies. However, where another financing mechanism may be shown at a later date to be more effective, the City may implement such other mechanisms in accordance with City policies. This will allow the City maximum flexibility in determining the best use of public financing to fund public infrastructure improvements.

The Traffic Impact Analysis by Linscott, Law & Greenspan (LL&G), dated November 22, 2005, has identified onsite and offsite road improvements that will be required as the result of the development of the project. The estimated cost of street improvements is identified in Table C.13. The improvement projects listed include both offsite and onsite improvements. Most of the improvement projects are eligible for funding through the City's Transportation Development Impact Fee (TDIF) program. In the event the developer constructs a TDIF improvement, the cost of the improvement may be eligible for credit against TDIF fees. Construction of non-TDIF eligible improvements shall be completed by the developer as a project exaction.

TDIF Fees and traffic signal fees generated by the project are identified on Table A.1. Funding for street improvements may be accomplished in one or more possible funding alternatives such as:

- Payment of TDIF fees.
- Construction of improvements by developer with credit toward DIF fees on building permits.
- Financing through assessment districts or Community Facility Districts (CFD).
- Expenditure of available DIF account funds.
- Construction of improvements by other developers.
- Federal Funds.

Some off-site sewer, drainage and water facilities may be the responsibility of the developer if the facility is needed to support the proposed development.

The project is anticipated to require one elementary school, which is to be constructed with funding through a Mello-Roos CFD that will be established by the Chula Vista Elementary School District. The project will generate Middle and High School age students. The project will participate in a CFD to be established by the Sweetwater Union High School District.

The project will trigger development impact fees for parks and libraries. Police, fire and emergency medical services, civic center, corporation yard, and other city public facilities will be funded, in part, from revenues generated from the payment of Public Facilities Development Impact Fees at building permit issuance.

Altogether, the City's development impact fees by phase and facility for the Project are identified on Table A.1.

Table A.1¹ Otay Ranch Village SPA 2, 3 and a Portion of Village 4 Summary of DIF Fees by Phase & Facility											
Facility	Blue	Red	Yellow	Green	Orange	Purple	Teal	White	Pink	Brown	Totals
Traffic (1)	\$1,640,640	\$6,473,408	\$4,900,791	\$3,615,994	\$5,151,489	\$5,399,457	\$6,743,512	\$58,897	\$6,206,486	\$7,342,396	\$47,533,070
Sewer	\$134,713	\$424,461	\$324,344	\$243,973	\$325,242	\$263,747	\$563,615	\$25,822	\$518,731	\$678,390	\$3,503,038
Drainage (2)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Water (2)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Police (5)	\$129,440	\$758,604	\$486,173	\$389,778	\$747,552	\$566,561	\$94,053	\$0	\$86,563	\$102,292	\$3,361,016
Fire/EMS (5)	\$80,800	\$361,167	\$258,190	\$196,059	\$313,872	\$223,242	\$52,476	\$0	\$48,297	\$57,073	\$1,591,176
Schools (3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Library (4)	\$135,200	\$588,423	\$425,610	\$321,371	\$503,568	\$311,598	\$0	\$0	\$0	\$0	\$2,285,770
Parks (4)	\$2,663,040	\$9,963,720	\$7,727,708	\$5,646,160	\$7,707,648	\$4,936,308	\$0	\$0	\$0	\$0	\$38,644,584
Recreation (5)	\$193,760	\$709,932	\$556,207	\$404,494	\$540,384	\$348,069	\$0	\$0	\$0	\$0	\$2,752,846
Civic Center (5)	\$195,680	\$818,598	\$602,681	\$451,236	\$683,904	\$483,306	\$70,144	\$0	\$64,558	\$76,289	\$3,446,396
Corp. Yard (5)	\$114,720	\$404,847	\$323,074	\$232,979	\$298,896	\$201,865	\$119,632	\$0	\$110,105	\$130,112	\$1,936,230
Pedestrian Bridge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Facilities	\$28,640	\$119,622	\$88,133	\$65,964	\$99,840	\$70,601	\$9,581	\$0	\$8,819	\$10,420	\$501,620
Total	\$5,316,633	\$20,622,782	\$15,692,911	\$11,568,008	\$16,372,395	\$12,804,754	\$7,653,013	\$84,719	\$7,043,559	\$8,396,972	\$105,555,746
Notes: (1) Includes TDIF, Interim SR-125 & Traffic Signal Fees. (2) No city imposed DIF program in place for this facility. (3) No city imposed DIF program, however, all properties, including non-residential, are assessed a special tax to fully mitigate impacts on school facilities caused by residential development. (4) Includes both Development and Acquisition in lieu. Not applicable to non-residential projects. (5) Facilities funded by Public Facilities DIF component. (6) The pedestrian bridge DIF will be established prior to the approval of the first final map for the project. (7) Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. Please reference Exhibit 4, Phasing Plan.											

¹ The fees provided in this table are estimates only and subject to change. Fees are based on the latest Form 5509. Fees are subject to change as the ordinance is amended by the City Council from time to time.

Table A.2 Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Timing and Funding Source by Facility		
Facility	Funding Source	Project Timing
Traffic		
1. Otay Ranch Village 2, 3, and a Portion of Village 4 SPA TDIF	Pay TDIF	Building Permit
2. No Specific Traffic Signal Facility	Pay Traffic Signal Fee	Building Permit
TDIF Streets:		
A. Heritage Road between Olympic Parkway and Santa Victoria (Street "D")	Developer Builds	A/F ² , 1 st EDU in Village 2 west of Heritage Road or 1,008 EDUs ³ in Village 2 overall
B. Heritage Road: Santa Victoria (Street "D") to Santa Lisa (St "F")	Developer Builds	A/F ² , 1,276 EDUs ³ overall or 380 EDUs (31.7 acres of industrial) in Village 3
C. Heritage Road: Santa Lisa (Street "F") to Street "J" North	Developer Builds	A/F ² , 1,276 EDUs ³ overall or 380 EDUs (31.7 acres of industrial) in Village 3
D. Heritage Road: Street "J" North to Street "J" South	Developer Builds	A/F ² , 1,276 EDUs ³ overall or 380 EDUs (31.7 acres of industrial) in Village 3
E. Heritage Road: Street "J" South to Main Street	Developer Builds	A/F ² , 1,276 EDUs ³ overall or 380 EDUs (31.7 acres of industrial) in Village 3
F. Main Street: Heritage Road to connect to existing improvements ⁴	Developer Builds	A/F ² , 1,276 EDUs ³ overall or 380 EDUs (31.7 acres of industrial) in Village 3
I. La Media Road: Santa Venetia to Birch Road	Developer Builds	1 st EDU in Village 2
K. La Media Road: Birch Road to Park P-4 Entrance	Developer Builds	AF, with Park development
L. Rock Mountain Rd: East of Heritage Rd and/or Main St within the SPA boundaries	Developer Builds	A/F ² , 1 st EDU ³ in Village 3/PA 18B, 2090 residential EDUs in Village 2 overall
Onsite Non-TDIF Streets:		
G. Santa Victoria (Street "D"): Olympic Parkway to Heritage Rd.	Developer Builds	1 st EDU ³ in Village 2 west of Heritage Road
H. Santa Diana (Street "E"): Santa Victoria (Street "D") to State St.	Developer Builds	A/F ² or 1,008 EDUs ³ in Village 2 overall
J. State Street (St. "E"): Santa Victoria (St. "B") to La Media Rd.	Developer Builds	1 st EDU ³ in Village 2
M. Santa Victoria (Street "D"): Santa Diana Road to State Street.	Developer Builds	A/F ² or 1,008 EDUs ³ in Village 2 overall
N. Santa Victoria (Street "B"): Santa Venetia to Santa Diana (Street "E")	Developer Builds	1 st EDU ³ in Village 2
O. Santa Victoria (Street "D"): Heritage Road to Santa Diana (Street "E").	Developer Builds	A/F ² or 1,008 EDUs ³ in Village 2 overall
Pedestrian Bridges	Pedestrian Bridge DIF	Per TM Condition

² A/F: Access or Frontage - Roadways needed for continuity and minimum access: roadway segment as determined by the City Engineer, is triggered with the first final map which has frontage on the roadway, or if roadway is required to provide access.

³ In terms of Equivalent Dwelling Units (EDU's) 1,276 residential units represents 1,276 equivalent dwelling units and 106 acres of industrial represents 1,276 EDU's based on SANDAG rates. Commercial uses are not included in the EDU calculations.

⁴ Interim Layout for Heritage Road and Main Street.

Table A.2 Continued Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Timing and Funding Source by Facility		
Sewer	Developer Builds Pay City Fees	Concurrent w/ Phasing Building Permit
Drainage	Developer Builds	Per Ordinance
Water	Pay OWD Capacity Fees	Pay @ purchase of Water Meters
Police	Pay PFDIF	Building Permit
Fire/EMS	Pay PFDIF	Building Permit
Schools	SUHSD Mello-Roos CVESD Mello-Roos	Building Permit
Libraries	Pay PFDIF	Building Permit
Parks Neighborhood Park Community Park	PAD Credit/Fees PAD Fees	Building Permit Building Permit
Recreation	Pay PFDIF	Building Permit
Civic Center	Pay PFDIF	Building Permit
Corp. Yard	Pay PFDIF	Building Permit
Other Public Facilities	Pay PFDIF	Building Permit

II.5.2 INTRODUCTION

II.5.2.1 Overview

The City of Chula Vista has looked comprehensively at issues dealing with development and the additional impacts it places on public facilities and services. The approval of the Threshold Ordinance and the General Plan update were the first steps in the overall process of addressing growth related issues. The second step in this process was the development and adoption of a specific Growth Management Element, which set the stage for the creation of the City's Growth Management Program.

The Chula Vista City Council adopted the Growth Management Program and Implementing Ordinance No. 2448 on May 28, 1991. These documents implement the Growth Management Element of the General Plan, and establish a foundation for carrying out the development policies of the City by directing and coordinating future growth in order to guarantee the timely provision of public facilities and services.

The Growth Management Ordinance requires a Public Facilities Finance Plan (PFFP) to be prepared for future development projects requiring a Sectional Planning Area (SPA) Plan or Tentative Map. The contents of the PFFP are governed by Section 19.09.060 of the Municipal Code, which requires that the plan show how and when the public facilities and services identified in the Growth Management Program will be installed or financed.

II.5.2.2 Purpose

The purpose of the Public Facilities Finance Plan is to implement the City's Growth Management Program and to meet the General Plan goals and objectives as well as the Growth Management Element goals and objectives. The Chula Vista Growth Management Program implements the City's General Plan and Zoning Ordinance by ensuring that development occurs only when necessary public facilities and services exist or are provided concurrent with the demands of new development.

II.5.2.3 Growth Management Threshold Standards

City Council Resolution No. 13346 identified eleven public facilities and services with related threshold standards and implementation measures. These public facilities and services were listed in a policy statement dated November 17, 1987 and have subsequently been refined based on recommendations from the Growth Management Oversight Commission (GMOC).

The eleven public facilities and services include:

- Traffic
- Police
- Fire/EMS
- Schools
- Libraries
- Parks and Recreation
- Water
- Sewer
- Drainage
- Air Quality
- Fiscal

During development of the Growth Management Program two new facilities were added to the list of facilities to be analyzed in the PFFP:

- Civic Facilities
- Corporation Yard

Threshold standards are used to identify when new or upgraded public facilities are needed to mitigate the impacts of new development. Development approvals will not be made unless compliance with these standards can be met. These threshold standards have been prepared to guarantee that public facilities or infrastructure improvements will keep pace with the demands of growth.

II.5.2.4 The Project

The Otay Ranch lies within the approximately 37,585-acre Eastern Territories Planning Area of the City of Chula Vista. Interstate 805 bounds this area on the west, San Miguel Mountain and State Route 54 on the north, the Otay Reservoirs and the Jamul foothills on the east, and the Otay River Valley on the south. The project area is located in the western portion of the Otay Ranch GDP (See Exhibits 1 & 2).

The proposed SPA area is consistent with the Otay Ranch Villages 2, 3 and a portion of Village 4 as identified in the Otay Ranch GDP (as amended). The Project area includes approximately 1187.3-acres of gently rolling terrain and is bounded by the alignments of La Media on the east and Olympic Parkway on the north. Main Street forms the southerly boundary of Village Three. The Project area is adjacent the county's Otay Landfill northern, eastern and southern boundary. The Project is located south of the built out Village 1 (Villages of Heritage and Heritage Hills) and west of Village 6, which are under construction. Additional future urban development will be located to the east and south on the adjacent Otay Ranch properties.

Olympic Parkway, an east west 6-lane prime arterial, will provide primary access. Olympic Parkway is also the northern boundary of the project. Other east west access will be provided by Birch Road, a 6-lane prime arterial, which terminates on the east side of La Media Road, and the future Rock Mountain Road/Main Street, a 6-lane prime arterial, which roughly defines the southern boundary of the project. North south access will be provided by two 6-lane prime arterials, Heritage Road and La Media Road. Freeway interchanges are planned on SR-125 at Birch Road and Olympic Parkway.

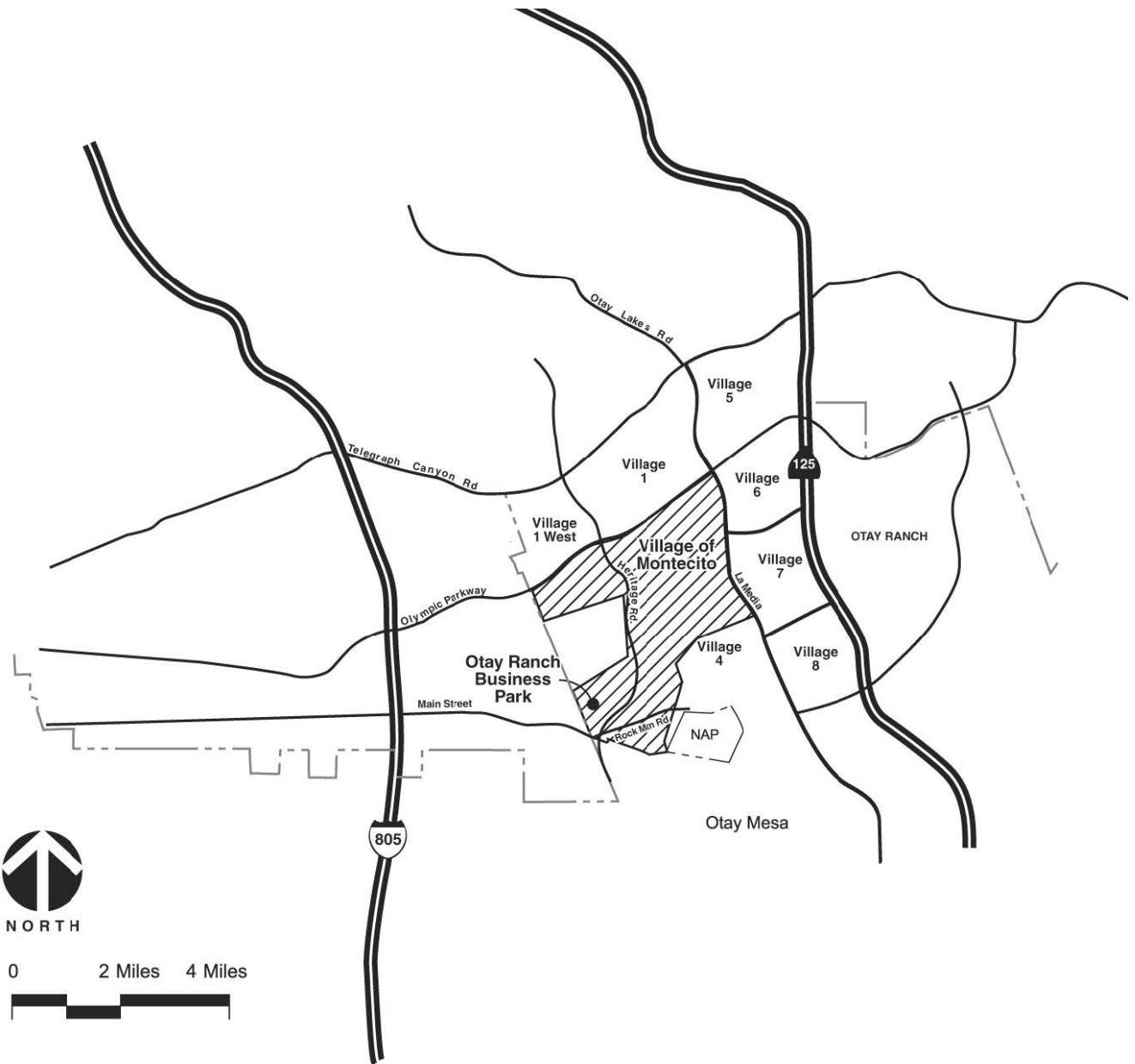
II.5.2.5 Public Facilities Finance Plan Boundaries

Section 19.12.070 of the Municipal Code requires that the City establish the boundaries of the PFFP at the time a SPA Plan or Tentative Map(s) is submitted by the applicant. The boundaries shall be based upon the impact created by the Project on the existing and future need for facilities. The project boundaries will correlate the proposed development project with existing and future development proposed for the area of impact to provide for the economically efficient and timely installation of both onsite and offsite facilities and improvements required by the development. In establishing the boundaries for the PFFP, the City shall be guided by the following considerations:

1. Service areas, drainage, sewer basins, and pressure zones that serve the Project;

2. Extent to which facilities or improvements are in place or available;
3. Ownership of property;
4. Project impact on public facilities relationships, especially the impact on the City's planned major circulation network;
5. Special district service territories;
6. Approved fire, drainage, sewer, or other facilities or improvement master plans.

The boundaries of the PFFP for the project are congruent with the SPA Plan boundaries. Also, the PFFP addresses certain facilities (streets, drainage, sewer, police, fire, etc.) that are impacted beyond the boundaries of the SPA Plan.



**Vicinity Map
Exhibit 2**

II.5.3 LAND USE ASSUMPTIONS

II.5.3.1 Purpose

The purpose of this section is to quantify how the Otay Ranch Villages 2, 3, and a portion of the Village 4 SPA project will be analyzed in relationship to all other projects which are at some stage in the City's development process. The Growth Management Program addressed the issue of development phasing in relationship to location, timing, and fiscal/economic considerations.

Based upon the overall elements to be considered when projecting the phasing of development and policies contained in the Growth Management Program, the City was able to forecast where and when development will take place and produced a 5 year Development Phasing Forecast. Subsequent to the approval of the Growth Management Program, the forecasted development phasing has been updated periodically as facility improvements are made and the capacity for new development becomes available. The current update is summarized on Table B.1.

The specific factors, which affect the development-phasing forecast include the status of development approvals and binding development agreements, and the completion of the construction of State Route 125. These components were reviewed as part of this PFFP in conjunction with the requirement to provide facilities and services concurrent with the demand created by the project to maintain compliance with the threshold standards.

The management of future growth includes increased coordination of activities of the various City departments as well as with both the Sweetwater Union High School District and the Chula Vista Elementary school District and the Otay Municipal Water District that serve the City of Chula Vista. The development phasing forecast is a component of the City of Chula Vista's Growth Management Program. The Planning and Building Department provides annual growth forecasts for two time frames: 18 months and a 5-year period. This information enables City departments and the other aforementioned service agencies to assess the probable impacts that growth may have on maintaining compliance with the City's facilities and service Threshold Standards. In addition, with this data City departments and the other service agencies will be able to report potential impacts to the GMOC.

II.5.3.2 Existing Development

As a starting point, the PFFP considers all existing development up to January 2003 as the base condition. This information is based upon City of Chula Vista Planning and Building Department growth management monitoring data. According to this and other data, the population of the City as of January 2004 is estimated at 217,603 (GMOC 2005 Annual Report). This estimate is based on city estimates of growth for 2003 and combined with data from the California Department of Finance (DOF).

For the purposes of projecting facility demands for the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA the City of Chula Vista utilizes a population coefficient of 3.036 persons per dwelling unit. This factor is used throughout this PFFP to calculate facility demands from approved projects. The coefficient has been confirmed for use in the PFFP by the Planning & Building Department. The same coefficient will be used for calculating the specific project facility demands.

II.5.3.3 Development Phasing Forecast

A summary of the latest development-phasing forecast is shown in Table B.1. The table presents an estimate of the amount of development activity anticipated to the year 2009. The total number of dwelling units permitted by the year 2009 is approximately 10,444 dwelling units. It should be noted that these projections are estimates and should be used for analytical purposes only and unless a development agreement or other legal instrument guarantees facility capacity, some projects with varying levels of entitlement may not have committed capacity.

Table B.1						
Five-Year Residential Unit Growth Forecast 2005 Through 2009⁵						
Projects	Forecast of Units Permitted 2005 to 2009			Approximate Units Remaining After 2009		
	MF	SF	Total	MF	SF	Total
Otay Ranch	4,863	3,507	8,370	9,357	888	10,245
Eastlake	536	315	851	0	0	0
Rolling Hills Ranch	88	458	546	0	0	0
Bella Lago	0	140	140	0	0	0
San Miguel Ranch	245	292	537	0	0	0
Sub- Total	5,732	4,712	10,444	9,357	888	10,245
Western Chula Vista	2,300	0	2,300	10,900	0	10,900
Total	8,032	4,712	12,744	20,257	888	21,145

Source: City of Chula Vista 24-Month and 5-Year Residential Growth Forecast Years 2005 through 2009, May 2005.

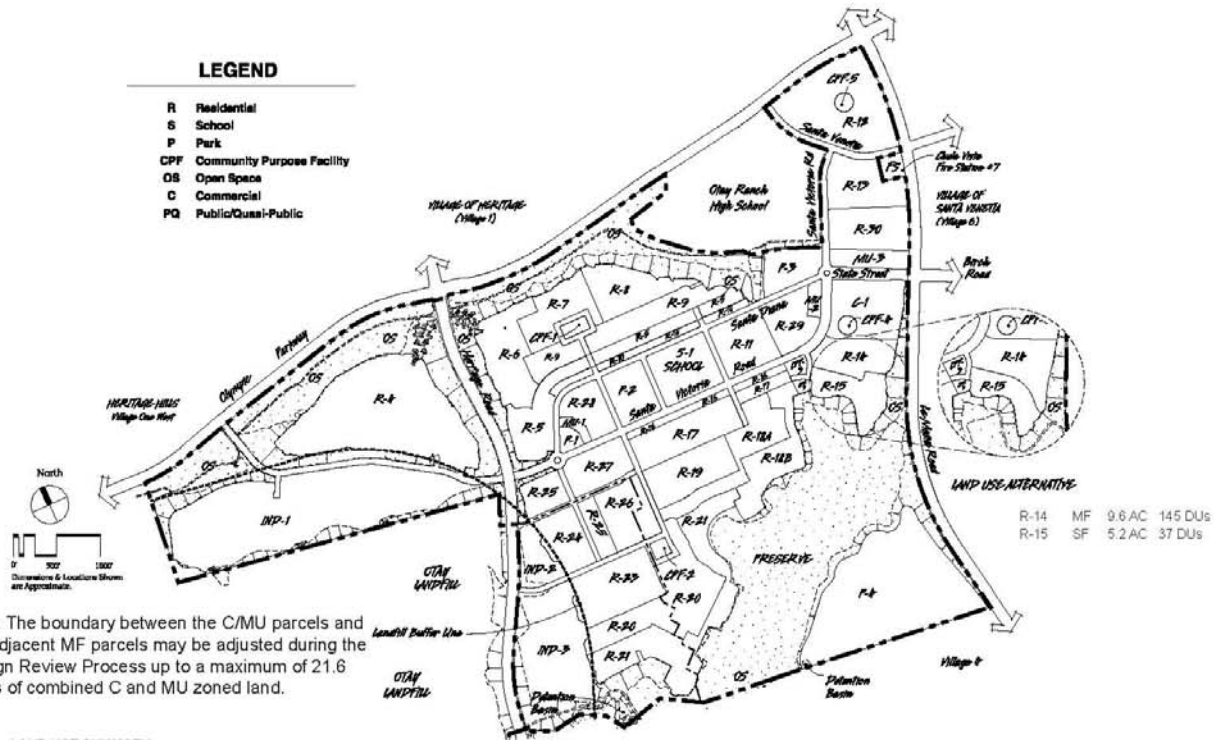
II.5.3.4 Otay Ranch Villages 2, 3 and a portion of Village 4 SPA Development Summary

The proposed project includes the following components: 2,786 residential units of which approximately 982 are single-family and approximately 1804 are multi-family units; approximately 11.9 acres for a commercial town center; 6.8 acres of mixed-use development, 6.1 acres of Community Purpose Facility uses; 14.0 acres of neighborhood parks; approximately 1.4 acre Town Square; a 44.2 acre community park; a 10.3 acre elementary school; a 264.4 acre business park related infrastructure; and natural and manufactured open space (Exhibit 3 & 4).

The project would require an amendment to the City of Chula Vista General Plan, the Otay Ranch GDP, County of San Diego Otay Subregional Plan, the Phase One and Two Resource Management Plan, and a boundary adjustment to the Chula Vista MSCP Subarea Plan. The project would also require the adoption of a SPA Plan for the Project, related documents and Tentative Map(s).

⁵ A year to year estimate of how many building permits will be issued has been developed for general planning purposes, but should not be relied upon for exactness. The total number of permits that will be issued over the next five years is reasonably certain however many variables may and will affect what the actual annual distribution will be.

R Residential
S School
P Park
CPF Community Purpose Facility
OS Open Space
C Commercial
PQ Public/Quasi-Public



LAND USE SUMMARY

Village Two

Neighborhood

Single Family

R-4	SF	41.5	160	3.9
R-6	SF	12.6	63	5.0
R-7	SF	9.4	44	4.7
R-8	SF	10.0	51	5.1
R-9	SF	13.3	101	7.6
R-15	SF	7.2	45	6.3
R-18A	SF	11.8	66	5.6
R-18B	SF	10.4	46	4.4
R-19	SF	10.8	83	7.7
R-20	SF	19.3	83	4.3
R-21	SF	22.2	84	2.9
R-23	SF	13.1	71	5.4
R-24	SF	7.6	41	5.4
R-25	SF	9.5	68	7.2
Subtotal Family		198.7	986	5.0

Multi-Family

R-5	MF	15.7	130	8.3
R-10	MF	4.5	90	20.0
R-11	MF	9.9	144	14.5
R-12	MF	24.0	295	12.3
R-13	MF	10.3	149	14.5
R-14	MF	7.6	137	18.0
R-16	MF	3.5	74	21.1
R-17	MF	11.5	119	10.3
R-26	MF	8.8	75	8.5
R-27	MF	8.8	110	12.5
R-28	MF	5.9	85	14.4
R-29	MF	8.9	152	17.1
R-30	MF	10.2	180	17.6
Subtotal Multi-Family		129.6	1,740	13.4

Mixed Use

MU-1	MU	1.1	10	9.1
MU-2	MU	1.4	12	8.6
MU-3	MU	4.3	38	8.8
Subtotal Mixed Use		6.8	60	

Commercial	Land Use	Acres	DUs	Target Density
C-1	Com1	11.9		
Subtotal Commercial		11.9		
Industrial				
IND-1	Industrial	51.5		
IND-2	Industrial	6.7		
IND-3	Industrial	29.7		
Subtotal Industrial		87.9		
Note: Industrial parcels may be developed as residential and CPF uses subject to future environmental review and SPA Policies and Requirements, after landfill operations cease at the Otay Landfill.				
Park				
P-1	Town Square Park	1.4		
P-2	Park	7.1		
P-3	Park	6.9		
P-4	Park	44.2		
Subtotal Parks		59.6		
CPF				
CPF-1	CPF	1.2		
CPF-2	CPF	0.9		
CPF-3	CPF	1.7		
CPF-4	CPF	1.5		
CPF-5	CPF	0.8		
Subtotal CPF		6.1		
Other				
S-1	School	10.3		
Open Space	OS	164.5		
Preserve	OS	74.7		
External Circulation		26.2		
Internal Circulation		42.6		
Subtotal Open Space & Other		318.3		
		818.9	2,786	

*An additional 3.0 to 5.0 acre CPF site will be provided within the Village Core Pursuant to a subsequent SPA Amendment

Site Utilization Plan Exhibit 3

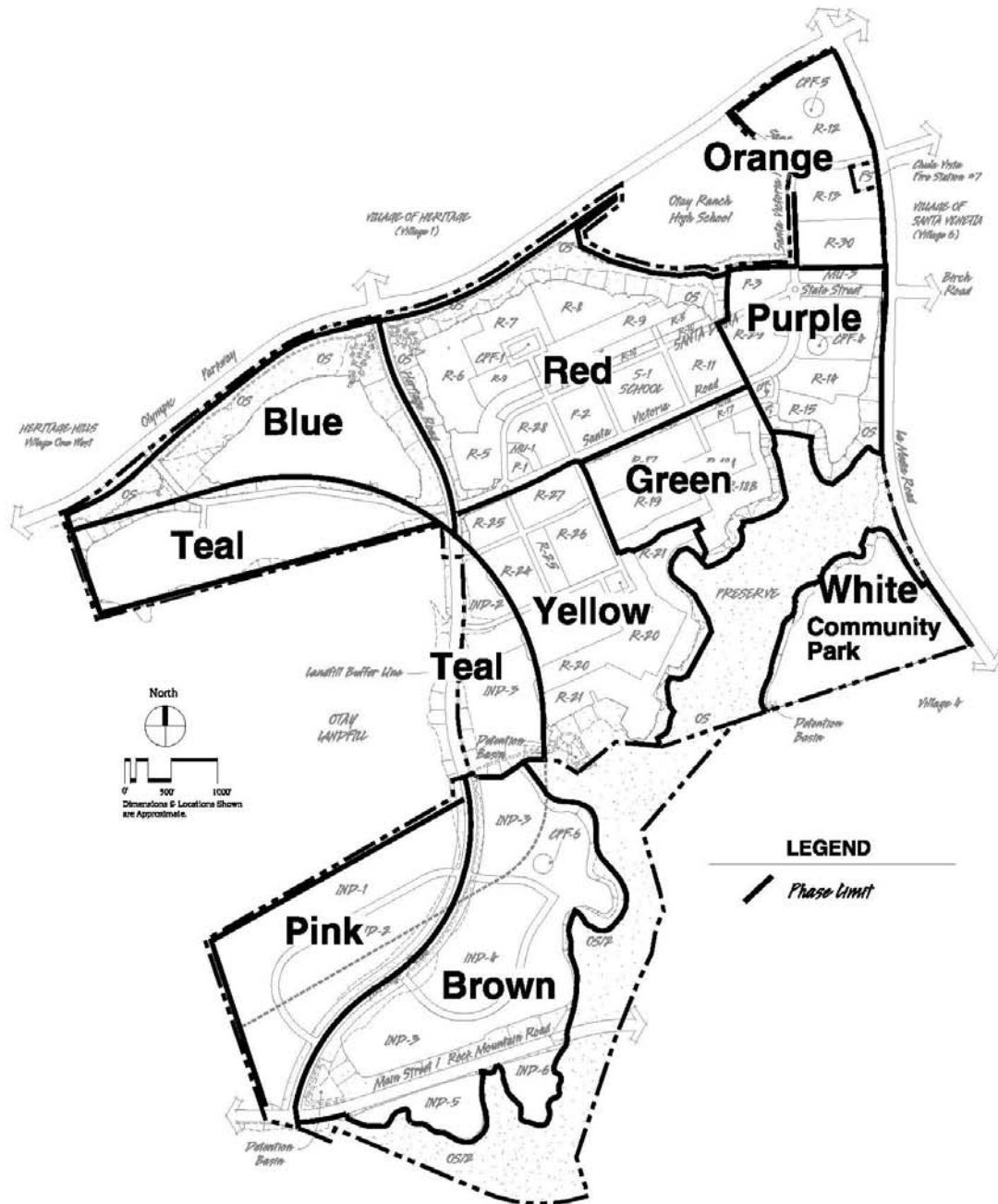


Village Three

I-1	Ind	54.5
I-2	Ind	26.4
I-3	Ind	50.1
I-4	Ind	26.4
I-5	Ind	11.3
I-6	Ind	7.8
Subtotal	Ind	176.5
CPF-1*	CPF	10.2
Manufactured OS	OS	39.0
Natural OS	OS	107.9
External Circulation		22.5
Internal Circulation		12.3
Total Village Three		368.4

*The size of the CPF site may be reduced pursuant to a subsequent SPA Amendment

Site Utilization Plan Exhibit 4



**Conceptual Phasing Plan
Exhibit 5**

II.5.3.5 DEVELOPMENT PHASING:

Multiple phases of development are envisioned to complete the required infrastructure improvements. The Conceptual Phasing Plan, Exhibit 5, reflects anticipated market demand for a variety of housing types, commercial and business park development. A summary of the infrastructure phasing is provided in Table B.2.

The conceptual phasing plan for the project recognizes that sequential phasing is frequently inaccurate due to unforeseen market changes or regulatory constraints. Therefore, this SPA Plan and PFFP permits non-sequential phasing by imposing specific facilities requirements, per the PFFP, for each phase to ensure that the SPA Plan areas are adequately served and City threshold standards are met. Public Parks and Schools shall be phased as needed.

Table B.2 Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Phasing Plan Summary			
Facility	Facility Description	Triggers	Financing Method
Traffic⁶			
A.	Heritage Road between Olympic Parkway and Street "D"	A/F ¹ , 1 st unit in Village 2 west of Heritage Road or 1,008 EDUs ² in Village 2 overall	TDIF
B.	Heritage Road: Santa Victoria (Street "D") to Santa Lisa (St "F")	A/F ¹ , 1,276 EDUs ² overall or 380 EDUs (31.7 acres of industrial) in Village 3	TDIF
C.	Heritage Road: Santa Lisa (Street "F") to Street "J" North	A/F ¹ , 1,276 EDUs ² overall or 380 EDUs (31.7 acres of industrial) in Village 3	TDIF
D.	Heritage Road: Street "J" North to Street "J" South	A/F ¹ , 1,276 EDUs ² overall or 380 EDUs (31.7 acres of industrial) in Village 3	TDIF
E.	Heritage Road: Street "J" South to Main Street ³	A/F ¹ , 1,276 EDUs ² overall or 380 EDUs (31.7 acres of industrial) in Village 3	TDIF
F.	Main Street: Heritage Road to connect to existing improvements	A/F ¹ , 1,276 EDUs ² overall or 380 EDUs (31.7 acres of industrial) in Village 3	TDIF
G.	Santa Victoria (Street "D"): Olympic Parkway to Heritage Rd.	1 st EDU in Village 2 west of Heritage Road	Exaction
H.	Santa Diana (Street "E"): Santa Victoria (Street "D") to State St.	A/F ¹ or 1,008 EDUs ² in Village 2 overall	Exaction
I.	La Media Road: Santa Venetia to Birch Rd.	1 st EDU in Village 2	TDIF
J.	State Street (St. "E"): Santa Victoria (St. "B") to La Media Rd.	1 st EDU in Village 2	TDIF
K.	La Media Rd: Birch Rd to Park P-4 Entrance	AF, with Park development	TDIF
L.	Rock Mountain Rd: East of Heritage Rd and/or Main St within the SPA boundaries	A/F ¹ , 1 st EDU in Village 3/PA 18B, 2090 residential EDUs in Village 2 overall	TDIF
M.	Santa Victoria (Street "D"): Santa Diana to State Street.	A/F ¹ or 1,008 EDUs ² in Village 2 overall	Exaction
N.	Santa Victoria (Street "B"): Santa Venetia to Santa Diana (Street "E")	1 st EDU in Village 2	Exaction
O.	Santa Victoria (Street "D"): Heritage Road to Santa Diana (Street "E")	A/F ¹ or 1,008 EDUs ² in Village 2 overall	Exaction

⁶ TDIF Streets will be constructed by Developer (receiving TDIF credits). Non TDIF Streets are developer exaction.

Table B.2 - Continued
Otay Ranch Village 2, 3, and a Portion of Village 4 SPA
Phasing Plan Summary

Facility	Facility Description	Triggers	Financing Method
Pedestrian Bridge ROW	West Olympic Parkway POC & South La Media POC	Per TM Condition	Fee Program
Potable Water	Zone 624 and 711 Improvements per OWD	Concurrent w/ Phasing	OWD CIP Fees
Recycled Water	Zone 680 Improvements per OWD	Concurrent w/ Phasing	OWD CIP Fees
Sewer	Connection to existing sewer system	Concurrent w/ Phasing	Fee Program
	Sewer Improvements per city	Concurrent w/ Phasing	Exaction
	Pay Fees	Concurrent w/ Building Permit	Fee Program
Storm Drain	Connect to Existing Drainage System	Concurrent w/ Grading Permit	Fee Program
Schools	No specific facility subject to fees	Pay School Fees	State Mandated Fees
Community Park	Park Dedication & Construction	Concurrent with Phasing	PAD Fees
Neighborhood Parks	Park Dedication & Construction	Concurrent with Phasing	PAD Fees
Recreation	Pay PFDIF Fee	Pay @ Bldg Permit	Fee Program
Library	Pay PFDIF Fee	Pay @ Bldg Permit	Fee Program
Fire & EMS	Pay PFDIF Fee	Pay @ Bldg Permit	Fee Program
Police	Pay PFDIF Fee	Pay @ Bldg Permit	Fee Program
Civic	Pay PFDIF Fee	Pay @ Bldg Permit	Fee Program
Corp Yard	Pay PFDIF Fee	Pay @ Bldg Permit	Fee Program
Other	Pay PFDIF Fee	Pay @ Bldg Permit	Fee Program

Footnotes:

- ¹ A/F: Access or Frontage - Roadways needed for continuity and minimum access: roadway segment as determined by the City Engineer, is triggered with the first final map which has frontage on the roadway, or if roadway is required to provide access.
- ² In terms of Equivalent Dwelling Units (EDU's) 1,276 residential units represents 1,276 equivalent dwelling units and 106 acres of industrial represents 1,276 EDU's based on SANDAG rates. Commercial uses are not included in the EDU calculations.
- ³ Interim Layout for Heritage Road and Main Street.

Table B.3⁷
Developer Proposed Village 2 & Portion of Village 4
Phasing Plan

		Blue		Red		Yellow		Green		Orange		Purple		Teal	White	AC	DU
Neighborhood	Land Use	AC	DU	AC	DU	AC	DU	AC	DU	AC	DU	AC	DU	AC	AC	Total	Total
RESIDENTIAL																	
R-4	SF	41.5	160													41.5	160
Subtotal		41.5	160													41.5	160
R-5	MF			15.7	130											15.7	130
R-6	SF			12.6	63											12.6	63
R-7	SF			9.4	44											9.4	44
R-8	SF			10.0	50											10.0	50
R-9	SF			13.3	101											13.3	100
R-10	MF			4.5	90											4.5	90
R-11	MF			9.9	144											9.9	144
R-28	MF			5.9	85											5.9	85
MU-1	MU			1.1	10											1.1	10
Subtotal				82.4	717											82.4	717
R-20	SF					19.3	83									19.3	83
R-21	SF					22.2	64									22.2	64
R-23	SF					13.1	71									13.1	71
R-24	SF					7.6	41									7.6	41
R-25	SF					9.5	68									9.5	68
R-26	MF					8.8	75									8.8	75
R-27	MF					8.8	110									8.8	110
Subtotal						89.3	512									89.3	512
R-16	MF							3.5	74							3.5	74
R-17	MF							11.5	119							11.5	119
R-18A	SF							11.8	65							11.8	66
R-18B	SF							10.4	48							10.4	46
R-19	SF							10.8	83							10.8	83
Subtotal								48.0	389							48.0	388
R-12	MF									24.0	295					24	295
R-13	MF									10.3	149					10.3	149
R-30	MF									10.2	180					10.2	180
Subtotal										44.5	624					44.5	624
R-14	MF											7.6	137			7.6	137
R-15	SF											7.2	45			7.2	44
R-29	MF											8.9	152			8.9	152
MU-2	MU											1.4	12			1.4	12
MU-3	MU											4.3	38			4.3	38
Subtotal												29.4	384			29.4	383
Residential Subtotal		41.5	160	82.4	717	89.3	512	48.0	389	44.5	624	29.4	384	0	0	335.1	2786

⁷ Acreages and dwelling unit counts are estimates only and may change during the final engineering and mapping process. The proposed numbers of Single Family and Multi-Family dwelling units in any one phase may be different from the SPA Plan.

**Table B.3 Continued
Developer Proposed Village 2 & Portion of Village 4
Phasing Plan**

Neighborhood	Land Use	Blue		Red		Yellow		Green		Orange		Purple		Teal	White	AC	DU
		AC	DU	AC	DU	AC	DU	AC	DU	AC	DU	AC	DU	AC	AC	Total	Total
NON-RESIDENTIAL																	
Ind-1	IND													51.5		51.5	
Ind-2	IND													6.7		6.7	
Ind-3	IND													29.7		29.7	
Subtotal		0		0		0		0		0		0		87.9		87.9	
CPF-1	CPF			1.2												1.2	
CPF-2	CPF					0.9										0.9	
CPF-3	CPF							1.7								1.7	
CPF-4	CPF											1.5				1.5	
CPF-5	CPF									0.8						0.8	
C-1	Com'l											11.9				11.9	
P-1	Park			1.4												1.4	
P-2	Park			7.1												7.1	
P-3	Park											6.9				6.9	
P-4	Park														44.2	44.2	
S-1	School			10.3												10.3	
Subtotal		0		20.0		0.9		1.7		0.8		20.3		0	44.2	87.9	
Non-Residential Total		0		20.0		0.9		0		0.8		20.3		87.9	44.2	175.8	0
TOTAL		41.5	160	102.4	717	90.2	512	49.7	389	45.3	624	49.7	384	87.9	44.2	510.9	2,786

**Table B.3 Continued
Developer Proposed Village 3
Phasing Plan**

	Land Use	Pink (Ac)	Brown (Ac)	Total
Ind-1	Industrial	54.5		54.5
Ind-2	Industrial	26.4		26.4
Ind-3	Industrial		50.1	50.1
Ind-4	Industrial		26.4	26.4
Ind-5	Industrial		11.3	11.3
Ind-6	Industrial		7.8	7.8
Subtotal		80.9	95.6	176.5
Other				
CPF-6			10.2	10.2
TOTAL		80.9	105.8	186.7

II.5.3.6 Development Impact Fee Programs

A. Transportation

The current Transportation Development Impact Fee (TDIF) Ordinance sets forth the calculation of development impact fees. This PFFP uses the CVMC Chapter 3.54 as the basis for the estimated TDIF fees. Table B.4 below illustrates the current fee schedule:

Table B.4		
TDIF Schedule		
Land Use Classification		TDIF Rate
Residential (Low)	0-6 dwelling units per gross acre	\$10,050 per DU
Residential (Med.)	6.1-18 dwelling units per gross acre	\$8,040 per DU
Residential (High)	>18.1 dwelling units per gross acre	\$6,030 per DU
Senior housing		\$4,020 per DU
Residential mixed use	>18 dwelling units per gross acre	\$4,020 per DU
Commercial mixed use	< 5 stories in height	\$160,800 per 20,000 sq. ft.
General commercial (acre)		\$160,800 per acre
Regional commercial (acre)	> 60 acres or 800,000 sq. ft.	\$110,550 per acre
High rise commercial (acre)	> 5 stories in height	\$281,400 per acre
Office (acre)	< 5 stories in height	\$90,450 per acre
Industrial RTP (acre)		\$80,400 per acre
18-hole golf course		\$703,500 per acre
Medical center		\$653,250 per acre

The total number of estimated DUs and commercial acres for the Village 2, 3 and a portion of 4 SPA Plan PFFP is presented in Table B.3.

B. Public Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is \$5,489/unit, multi-family residential is \$5,109/unit, commercial (including office) development is \$21,727/acre and industrial development is \$4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report. Table B.5 provides a break down of what facilities the fee funds.

Table B.5 Public Facilities Estimated DIF Fee Components				
Component	Single Family /DU	Multi-Family /DU	Commercial /Acre	Industrial /Acre
Civic Center	\$1,223	\$1,096	\$4,767	\$798
Police	\$809	\$1,198	\$10,423	\$1,070
Corporation Yard	\$717	\$479	\$3,318	\$1,361
Libraries	\$845	\$807	\$0	\$0
Fire Suppression	\$505	\$503	\$2,521	\$597
GIS, Computers, Telecom & Records Management	\$30	\$27	\$119	\$18
Administration	\$149	\$133	\$579	\$91
Recreation	\$1,211	\$866	\$0	\$0
Total per Residential Unit	\$5,489	\$5,109		
Total per Com'l/Ind. Acre			\$21,727	\$4,044

C. Pedestrian Bridges

The Otay Ranch Pedestrian Bridge Program currently calls for the construction of two bridges connecting to Village Two: the West Olympic Parkway Pedestrian Over-crossing (POC) between Village One and the Otay Ranch High School and South La Media POC between Village Two and Village Six at the intersection of Santa Venetia and La Media. The financing for half of each POC has already been provided through the establishment of the Otay Ranch Pedestrian DIF Program per Ordinance No. 2842. The Pedestrian Bridge DIF set a fee of \$783/single-family) dwelling unit and \$580/multi-family dwelling unit. The Village Two project will be conditioned to either form a Pedestrian Bridge DIF program, or, annex to the existing program's "Area of Benefit" in order to complete the financing for the two POCs. Half of the estimated construction cost of the two POCs is \$1.96 million.

II.5.4 FACILITY ANALYSIS

This portion of the PFFP contains 13 separate subsections for each facility addressed by this report. Of the 13 facilities, 11 have adopted threshold standards; the Civic Center and Corporation Yard do not. Table B.6 highlights the level of analysis for each facility.

Table B.6 Level of Analysis				
Facility	Citywide	East of I-805	Service Area Sub-basin	Special District
Traffic	✓	✓		
Pedestrian Bridges			✓	
Police	✓			
Fire/EMS	✓		✓	
Schools				✓
Libraries	✓			
Parks, Recreation & Open Space		✓		
Water			✓	✓
Sewer			✓	
Drainage			✓	
Air Quality	✓			
Civic Center	✓			
Corp. Yard	✓			
Fiscal	✓		✓	

Each subsection analyzes the impact of the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Project based upon the adopted Quality of Life Standards. The analysis is based upon the specific goal, objective, threshold standard and implementation measures. The proposed SPA plan is used to determine facility adequacy and is referenced within the facility section.

Each analysis is based upon the specific project processing requirements for that facility, as adopted in the Growth Management Program. These indicate the requirements for evaluating the project consistency with the threshold ordinance at various stages (General Development Plan, SPA Plan/Public Facilities Finance Plan, Tentative Map, Final Map and Building Permit) in the development review process.

A service analysis section is included which identifies the service provided by each facility. The existing plus forecasted demands for the specific facility are identified in the subsection based upon the adopted threshold standard.

Each facility subsection contains an adequacy analysis followed by a detailed discussion indicating how the facility is to be financed. The adequacy analysis provides a determination of whether or not the threshold standard is being met and the finance section provides a determination if funds are available to guarantee the improvement. If the threshold standard is not being met, mitigation is recommended in the Threshold Compliance and Recommendations subsection which proposes the appropriate conditions or mitigation to bring the facility into conformance with the threshold standard.

II.5.4.1 TRAFFIC

II.5.4.1.1 GMOC Threshold Standard

1. Citywide: Maintain Level of Service (LOS) "C" or better, as measured by observed average travel speed on all signalized arterial segments except that during peak hours a LOS of "D" can occur for no more than any two hours of the day.
2. West of Interstate 805: Those signalized intersections which do not meet the standard above may continue to operate at their current LOS, but shall not worsen.
3. Per the Otay Ranch General Development Plan, the internal village streets and roads are not expected to meet the Citywide LOS standard of "C" or better.

II.5.4.1.2 GMOC Level of Service (LOS) Definition

Six levels of services (LOS) have been defined varying from A (free flow) to F (severe congestion). A general definition of LOS is summarized in Table C.4. The City of Chula Vista's GMOC uses an LOS definition for signalized arterial segments as a method for evaluating and comparing traffic conditions. Arterial LOS measurements consider average weekday peak hours and exclude seasonal and special circumstance variations. The following table summarizes the GMOC Traffic Quality of Life Threshold Standard for signalized arterial streets:

Table C.1 GMOC LOS Definition			
Level of Service	Average Travel Speed (mph)		
	Class I	Class II	Class III
A	> 35	> 30	> 25
B	> 28	> 24	> 19
C	> 22	> 18	> 13
D	> 17	> 14	> 9
E	> 13	> 10	> 7
F	< 13	< 10	< 7

SOURCE: Highway Capacity Manual, 1994.

The arterial streets are divided into the following three classifications:

- (1) Class I arterials are roadways where free flow traffic speeds range between 35 mph and 45 mph and the number of signalized intersections per mile is less than four (4). There is no parking and there is generally no access to abutting property.
- (2) Class II arterials are roadways where free flow traffic speeds range between 30 mph and 35 mph, the number of signalized intersections per mile range between four (4) and eight (8). There is some parking and access to abutting properties is limited.
- (3) Class III arterials are roadways where free flow traffic speeds range between 25 mph and 35 mph, and the number of signalized intersections per mile are closely spaced. There is substantial parking and access to abutting property is unrestricted.

II.5.4.1.3 Freeway Segment LOS and Thresholds

The analysis of freeway segment LOS is based on the procedure developed by Caltrans District 11, which is based on methods described in the *1994 Highway Capacity Manual*. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). Directional and truck factors are also used to calculate the future freeway volumes. V/C ratios are then compared to the V/C ranges shown on the tables to determine the LOS for each segment. Caltrans recommends LOS E or better as an acceptable threshold for determining impacts on the regional freeway system. LOS E is used as the threshold of significance because a decrease from this level of service to LOS F determines the need to develop a freeway Deficiency Plan.

Table C.2			
Caltrans District 11 Freeway Segment Level of Service Definitions			
LOS	V/C	Congestion/Delay	Traffic Description
<i>Used for freeways, expressways and conventional highways</i>			
A	<0.41	None	Free flow
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
<i>Used for conventional highways</i>			
F	<1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 sec./vehicle
<i>Used for freeways and expressways</i>			
F(0)	1.01-1.25	Considerable 0-1 hr delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
F(1)	1.26-1.35	Severe 1-2 hr delay	Very heavy congestion, very long queues.
F(2)	1.36-1.45	Very Severe 2-3 hr delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F(3)	>1.46	Extremely Severe 3+ hours of delay	Gridlock

SOURCE: Caltrans 1992

Caltrans LOS Definition

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS for freeway segments can generally be categorized per Table C.2.

II.5.4.1.4 Segment LOS Standards and Thresholds

This section presents the LOS standards and thresholds utilized by the City of Chula Vista to analyze roadway segment performance. Table C.3 presents the City of Chula Vista roadway segment capacity and level of service standards for arterial roadways.

Table C.3 Chula Vista Segment Capacity and LOS Standards Average Daily Traffic Volumes					
Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	52,500	61,300	70,000	78,800	87,500
Prime Arterial (6-lane)	37,500	43,800	50,000	56,300	62,500
Major Street (6-lane)	30,000	35,000	40,000	45,000	50,000
Major Street (4-lane)	22,500	26,300	30,000	33,800	37,500
Village Entry ⁸	16,500	19,300	22,000	24,800	27,500
Secondary Village Entry w/ Median	5,600	6,600	7,500	8,400	9,400
Secondary Village Entry/Promenade (1)	5,600	6,600	7,500	8,400	9,400

(1) If driveway access to adjacent properties is permitted all applicable values of LOS are reduced by 2,500 ADT.

SOURCE: City of Chula Vista Subdivision Manual (Revised 7/1/2002)

Table C.4 Street Segment Level of Service Threshold Descriptions	
LOS	Description
A	Describes primarily free-flow operations. Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	Also represents reasonably free-flow, and speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.
C	Provides for flow with speeds still at or near the free-flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted at LOS C, and lane changes require more vigilance on the part of the driver. The driver now experiences a noticeable increase in tension because of the additional vigilance required for safe operation.
D	The level at which speeds begin to decline slightly with increasing flows. In this range, density begins to deteriorate somewhat more quickly with increasing flows. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.
E	Describes operation at capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream. At capacity, the traffic stream has no ability to dissipate even the most minor disruptions, and any incident can be expected to produce a serious breakdown with extensive queuing.
F	Describes breakdowns in vehicular flow. Such conditions generally exist within queues forming behind breakdown points such as traffic incidents and recurring points of congestion. Whenever LOS F conditions exist, there is a potential for them to extend upstream for significant distances.

SOURCE: Highway Capacity Manual, 1994.

The analysis of street segment LOS is based on the functional classification of the roadway, the maximum desired level of service capacity, roadway geometries, and the existing or forecasted average daily traffic (ADT) volume. City of Chula Vista LOS D were utilized to determine if a segment would operate over or under capacity. Table C.4, Street Segment Level of Service Threshold Descriptions, is a description of the various street segment LOS thresholds.

II.5.4.1.5 Intersection LOS Standards and Threshold

The analysis of existing and projected peak hour intersection performance was conducted using the methodology documented in the 1994 Highway Capacity Manual (Transportation

⁸ No LOS volumes have been established for Otay Ranch Village Entry Streets. It is assumed that the Village Entry Street is the same as Class I Collector. The Secondary Village Entry with Median and Secondary Village Entry/Promenade is assumed to be similar to the Class II and III Collector, respectively.

Research Board Special Report 209). LOS C or better indicates acceptable operating conditions for signalized intersections during AM and/or PM peak hour conditions. Those intersections found to have LOS E or F under an analysis of future conditions are considered to have significant impacts and will require mitigation.

II.5.4.1.5.1 Signalized Intersection Analysis

The measure of effectiveness for intersection operations is level of service. In the 2000 Highway Capacity Manual (HCM), LOS for signalized intersections is defined in terms of delay. The LOS analysis results in seconds of delay expressed in terms of letters A through F (see Table C.5).

Table C.5 Level of Service Thresholds For Signalized Intersections	
Average Control Delay per Vehicle (Seconds/Vehicle)	Level Of Service
0.0 ≤ 10.0	A
10.1 to 20.0	B
21.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.0	F

SOURCE: Highway Capacity Manual, 2000.

Table C.6 Intersection LOS Threshold Descriptions	
Level of Service	Description
A	LOS A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	LOS B describes operations with delay in the range 10.1 seconds and 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	LOS C describes operations with delay in the range 20.1 seconds and 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	LOS D describes operations with delay in the range 35.1 seconds and 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or higher v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are more frequent.
E	LOS E describes operations with delay in the range of 55.1 seconds to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	LOS F describes operations with delay in excess of over 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

SOURCE: Highway Capacity Manual, 2000.

Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Table C.6 is a description of the various intersection LOS thresholds.

II.5.4.1.5.2 Unsignalized Intersection Analysis

For unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. Table C.7 below depicts the criteria, which are based on the average control delay for any particular minor movement.

Table C.7		
Level of Service Thresholds for Unsignalized Intersections		
Average Control Delay Per Vehicle (Seconds/Vehicle)	Level of Service	Expected Delay to Minor Street Traffic
0.0 ≤ 10.0	A	Little or no delay
10.1 to 15.0	B	Short traffic delays
15.1 to 25.0	C	Average traffic delay
25.1 to 35.0	D	Long traffic delays
35.1 to 50.0	E	Very long traffic delays
≥ 50.0	F	Severe congestion

Source: Highway Capacity Manual, 2000.

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This LOS is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

II.5.4.1.6 Chula Vista Traffic Monitoring Program (TMP)

The TMP stipulates that the existing level of service on arterial segments in Chula Vista be maintained at LOS C or better, with the exception that LOS D is acceptable on signalized arterial segments for two hours per day maximum. The Public Works Department of the City of Chula Vista evaluates LOS for arterial roadway segments utilizing the HCM methodology, Chapter 11, based on average travel speeds, to adhere to the Growth Management traffic threshold standards. The adopted Growth Management Ordinance mandates the project's participation in the traffic section as it relates to the City's annual review of network performance. All major circulation element facilities within the City of Chula Vista are subject to review. Those facilities where traffic volumes have increased by at least 10% since the last review or have experienced a significant change in conditions or are at the upper fringes of LOS C approaching LOS D are included in the annual traffic study, which is reviewed for conformance by the Growth Management Oversight Committee (GMOC). The City of Chula Vista requires the application of these guidelines to the future development of the project.

Utilization of the roadway and intersection performance standards presented in this chapter and the required adherence to the Growth Management traffic threshold standards will result in full conformance with the requirements of the City of Chula Vista.

II.5.4.1.7 Service Analysis

The Public Works Department of the City of Chula Vista is responsible for ensuring that traffic improvements are provided to maintain a safe and efficient street system within the City. Through project review, City staff ensures the timely provision of adequate local circulation system capacity in response to planned development while maintaining acceptable LOS. To accomplish their review the Public Works Department has adopted guidelines for Traffic Impact Studies (January, 2001). These guidelines ensure uniformity in the preparation of traffic studies. Further, the guidelines assist in maintaining acceptable standards for planned new roadway segments and signalized intersections at the build out of the City's General Plan and Circulation Element. The Circulation Element of the General Plan serves as the overall facility master plan.

In conformance with requirements of the Congestion Management Program (CMP), an analysis of CMP freeways and arterials is required for any project that generates 2,400 daily, or 200 peak hour trips (As detailed in the 1991 Congestion Management Program). This analysis, *Traffic Impact Analysis for Villages 2 & 3 and Planning Area 18B, November 22, 2005, by Linscott, Law and Greenspan (LL&G)* was prepared for the City of Chula Vista. This document is referred to as the "LL&G Traffic Analysis" throughout this PFFP. The LL&G Traffic Analysis is the basis of the Traffic Section of this PFFP and addresses both existing and planned circulation system conditions, details necessary improvements and outlines the incremental circulation improvements based upon planned project phasing. Further, the LL&G Traffic Impact Analysis also includes an evaluation of impacts that are considered significant as a result of project development.

Based on the distribution of project traffic as determined by the Select Zone Assignment (SZA) and the requirements of the CMP, the project study area was established. The study area is bound by Telegraph Canyon Road/Otay Lakes Road to the north, Hunte Parkway to the east. Main Street to the south and Interstate 805 (I-805) to the West. All signalized intersections, freeway interchanges and arterial segments within this area were analyzed under various scenarios by LL&G (see LL&G Traffic Analysis for scenario details). The proposed circulation network (described later in this section) was analyzed in the General Plan Update, which was approved by the City Council on December 13, 2005. The project access intersections on Olympic Parkway and Heritage Road were also analyzed. The intersections and segments analyzed in the LL&G Traffic Analysis report are listed below:

A. Intersections:

- | | |
|---|---|
| 1. Telegraph Canyon Rd/I-805 SB Ramps | 6. Telegraph Cyn Rd/Otay Lakes Rd./La Media Rd. |
| 2. Telegraph Canyon Rd/I-805 NB Ramps | 7. Otay Lakes Rd/SR-125 SB Ramps* |
| 3. Telegraph Canyon Rd/Oleander Ave. | 8. Otay Lakes Rd/SR-125 NB Ramps* |
| 4. Telegraph Canyon Rd/Medical Center Dr. | 9. Otay Lakes Rd/Eastlake Parkway |
| 5. Telegraph Cyn Rd/Paseo Ranchero/Heritage Rd. | 10. Otay Lakes Rd/Hunte Parkway |
| | 11. Palomar Street/Oleander Ave. |
| | 12. Palomar Street/Brandywine Av. |
| | 13. Palomar Street/Heritage Road |
| | 14. Palomar Street/La Media Road |

- | | |
|--------------------------------------|---|
| 15. Olympic Parkway/I-805 SB Ramps | 31. Birch Road/La Media Road* |
| 16. Olympic Parkway/I-805 NB Ramps | 32. Birch Road/SR-125/SB Ramps* |
| 17. Olympic Parkway/Oleander Ave. | 33. Birch Road/ SR-125/NB Ramps* |
| 18. Olympic Parkway/Brandywine Ave. | 34. Birch Road/Eastlake Parkway* |
| 19. Olympic Parkway/Heritage Rd. | 35. Rock Mountain Road/La Media Rd. |
| 20. Olympic Parkway/La Media Rd. | 36. Rock Mountain Road/SR-125 SB Ramps* |
| 21. Olympic Parkway/Palomar Street | 37. Rock Mountain Road/SR-125 NB Ramps* |
| 22. Olympic Parkway/SR-125 SB Ramps* | 38- Hunte Parkway/Eastlake Parkway |
| 23. Olympic Parkway/SR-125 NB Ramps* | 39. Heritage Road/Main St.* |
| 24. Olympic Parkway/Eastlake Parkway | 40. Rock Mountain Road/Main St.* |
| 25. Olympic Parkway/Hunte Parkway | 41. Main Street/La Media Rd* |
| 26. Main Street/I-805 SB Ramps | 42. Main Street SR-125 SB Ramps* |
| 27. Main Street/I-805 NB Ramps | 43. Main Street SR-125 NB Ramps* |
| 28. Main Street/Oleander Avenue | |
| 29. Main Street/Brandywine Avenue | |
| 30. Street "D"/Heritage Road* | |

* Future Intersections

B. Segments

- **Telegraph Canyon Road**
 - I-805 to Oleander Avenue
 - Oleander Avenue to Medical Center Drive
 - Medical Center Drive to Paseo Ranchero/Heritage Road
 - Paseo Ranchero/Heritage Road to Otay Lakes Road
- **Otay Lakes Road**
 - North of Telegraph Canyon Road
 - J Street Telegraph Canyon Road
 - La Media Road to SR-125
 - SR-125 to Eastlake Parkway
 - Eastlake Parkway to Lane Avenue
- **Palomar Street**
 - I-805 to Medical Center Drive
 - Medical Center Drive to Heritage Road
 - Heritage Road to La Media Road
 - La Media Road to Olympic Parkway
- **Olympic Parkway**
 - I-805 to Oleander Avenue
 - Oleander Avenue to Medical Center Drive
 - Medical Center Drive to Heritage Road
 - Heritage Road to La Media Road
 - La Media Road to Palomar Street
 - Palomar Street to Eastlake Parkway
 - Eastlake Parkway to Hunte Parkway
- **Birch Road**
 - La Media Road to SR-125
 - SR-125 to Eastlake Parkway

- **Rock Mountain Road**
 - Main Street to La Media Road
 - La Media Road to SR-125
 - SR-125 to Eastlake Parkway
- **Main Street**
 - I-805 to Oleander Avenue
 - Oleander Avenue to Brandywine Avenue
 - Brandywine Avenue to Heritage Road
 - Heritage Road to Rock Mountain Road
 - Rock Mountain Road to La Media Road
 - La Media Road to SR-125 SB Ramps
- **Oleander Avenue**
 - Telegraph Canyon Road to Palomar Street
 - Palomar Street to Olympic Parkway
 - Olympic Parkway to Main Street
- **Medical Center Drive**
 - Telegraph Canyon Road to Palomar Street
- **Brandywine Avenue**
 - Palomar Street to Olympic Parkway
 - Olympic Parkway to Main Street
- **Paseo Ranchero**
 - North of Telegraph Canyon Road
 - Telegraph Canyon Road to Palomar Street
 - Palomar Street to Olympic Parkway
 - Olympic Parkway to Birch Road
 - Birch Road to Main Street
- **La Media Road**
 - Telegraph Canyon Road to Palomar Street
 - Palomar Street to Olympic Parkway
 - Olympic Parkway to Birch Road
 - Birch Road to Rock Mountain Road
 - Rock Mountain Road to Main Street
- **Eastlake Parkway**
 - Fenton Street to Otay Lakes Road
 - Otay Lakes Road to Olympic Parkway
 - Olympic Parkway to Birch Road
 - Birch Road to Rock Mountain Road
- **Hunte Parkway**
 - Otay Lakes Road to Clubhouse Drive
 - Clubhouse Drive to Olympic Parkway
 - Olympic Parkway to Eastlake Parkway

C. Traffic Analysis

The adopted land uses and circulation element are currently under review and some proposed changes are anticipated. These changes are described below:

- Table Two of the LL&G Traffic Analysis summarizes the three alternate land use plans that were under consideration by the City as part of the 2020 General Plan Update for Villages 2, 3, 4, 7, 8 and 9. The General Plan Update was approved by

the City Council on December 13, 2005. The Village Two proposed project is contained in GPU Alternative 2, which also contains the most intensive residential densities of the alternatives. Therefore, the most intensive land uses proposed in General Plan Update Alternative 2 has been included in the LL&G Traffic Analysis to insure the worst-case scenario is analyzed. The other General Plan Update plans in Alternatives 1 and 3 are less intense and have not been included in the LL&G Traffic Analysis.

- **Proposed Circulation Element changes:** In the city adopted circulation element, Main Street extends east to SR 125, with an interchange at SR 125. Rock Mountain Road intersects Main Street between Heritage Road and La Media Road. In the proposed Circulation Element, Main Street terminates at Heritage Road. The Main Street/SR 125 interchange will no longer be built. Rock Mountain Road is the east leg of the Heritage Road/Main Street intersection and La Media Road will terminate in Village 8. Figures 5 and 6 of the LL&G Traffic Analysis depict the Adopted and Proposed Circulation Elements respectively.

A total of 7 Scenarios were analyzed in the LL&G Traffic Analysis, which have different assumptions concerning the study area, land use and roadway network. A detailed description of each scenario is provided in the LL&G Traffic Analysis.

D. SANDAG Traffic Modeling

The basis of the LL&G Traffic Analysis is the Series 10.0, 2030 City/County Forecast Traffic Model, which is produced by the San Diego Association of Governments (SANDAG). LL&G worked with the City of Chula Vista and SANDAG to input the proper land use and network designations into the model for the aforementioned 7 scenarios.

The LL&G Traffic Analysis used a model with the appropriate land use, City of Chula Vista circulation element and the planned SR 125 assumptions for the entire study area for each scenario. The project land uses were coded into the model exactly as proposed/adopted as appropriate. After the proper land use intensities and network configurations were entered into the model for each study scenario, the model was run. The SANDAG model outputs ADTs on all Circulation Element street segments.

The SANDAG model volumes for each scenario were used exactly as indicated in the output plot with two exceptions. LL&G considered the volumes on Telegraph Canyon Road between I-805 and Heritage Road to be unusually high as compared to parallel east/west routes East “H” Street and Olympic Parkway. While volumes on Telegraph Canyon Road were in the high 60,000’s, volumes on East “H” Street and Olympic Parkway were in the 40,000’s. This was considered unrealistic by LL&G since most project traffic and other eastern territories traffic is in no way, forced to use Telegraph Canyon Road. Past modeling had indicated a more even distribution among the three east/west facilities. Therefore about 15% of the Telegraph Canyon Road traffic was reallocated to East “H” Street and Olympic Parkway. However, the overall traffic on East “H” Street, Telegraph Canyon Road and Olympic Parkway was not reduced. It was only reallocated.

Likewise, the volumes on Otay Lakes Road between SR-125 and Eastlake Parkway were extremely high (in the 80,000's), while parallel volumes on East "H" Street and Olympic Parkway were in the 30,000's and 40,000's. This is not realistic since traffic will generally flow to the area of least resistance. Therefore, the ADT on Otay Lakes Road between SR-125 and Eastlake Parkway was reduced by about 25% and this traffic was reallocated to East "H" Street and Olympic Parkway. Again, the overall traffic was not reduced in any way.

E. Growth Management Oversight Commission (GMOC) Analysis

The Chula Vista Traffic Monitoring Program (TMP) assesses the operating performance of the City's arterial street system for compliance with the Threshold Standards of the GMOC. The threshold standards specify that a Level of Service (LOS) of C or better, as measured by average travel speeds on the arterial, shall be maintained with an exception that during peak hours LOS D can occur for no more than any two hours of the day. In addition, planned arterial facilities that are not currently included in the current TMP, the definition of segment length and facility classification will be based on direction provided by the City Engineer.

LL&G prepared a near-term analysis of Telegraph Canyon Road arterial segments based on the City of Chula Vista's GMOC TMP methodology. Only this arterial was analyzed because the City of Chula Vista's significance criteria dictates that if planning analysis (v/c) indicates LOS D, E or F, the GMOC method shall be utilized in the short-term (0-4 year horizon). No studies were done on Olympic Parkway since a major portion of Olympic Parkway has just been constructed and no historical data is available.

An analysis was performed to calculate the decrease in travel speed due to the addition of project traffic on Telegraph Canyon Road. The decrease in travel speeds due to the project was calculated using linear regression. By utilizing linear regression, a formula can be derived that can describe the dependence of one variable on another. For example, as the volume increases on a TMP segment, the average travel speed and LOS will decrease. Using the TMP speed data as one variable and ADT as the other variable, linear regression equations were calculated for each TMP segment. Roadways can be classified as Class I, II or III depending on their functional and design features as outlined in Chapter 11 of the Highway Capacity Manual.

Table C.8 summarizes the observed peak hour travel speeds on Telegraph Canyon Road between I-805 and Otay Lakes Road in the Year 2003, obtained from the City of Chula Vista.

Table C.8 Telegraph Canyon Road (Class II) Existing TMP Speeds and LOS Conditions				
TIME AND DIRECTION	1-805 TO PASEO RANCHERO		PASEO RANCHERO TO OTAY LAKES ROAD	
	SPEED	LOS	SPEED	LOS
AM Westbound	29.4	B	40.4	A
PM Eastbound	28.7	B	36.0	A

Source: City of Chula Vista TMP Data, 2004.

F. Congestion Management Program

The Congestion Management Program Update (CMP) was adopted in January 2003 by the SANDAG Board, and is intended to directly link land use, transportation and air quality through Level of Service performance. Local agencies are required by statute to conform to the CMP.

The CMP requires an Enhanced CEQA Review for all large projects that are expected to generate more than 2,400 ADT or more than 200 peak hour trips. Since the project is calculated to generate traffic in excess of these amounts, this level of review is required.

In 1993, the Institute of Transportation Engineers California Border Section and the San Diego Region Traffic Engineer's Council established a set of guidelines to be used in the preparation of traffic impact studies that are subject to the Enhanced CEQA review process. This published document, which is titled 1993 Guidelines for Congestion Management Program Transportation Impact Reports for the San Diego Region, requires that a project study area be established as follows:

- 1) All streets and intersections on CMP principal arterials where the project will add 50 or more peak hour trips in either direction.
- 2) Mainline freeway locations where the project will add 50 or more peak hour trips in either direction.

This project is calculated to add more than 50 new directional peak hour trips to I-805. This is the only CMP facility in the study area. A complete analysis of I-805 is included in the LL&G Traffic Analysis.

II.5.4.1.8 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for Traffic Facilities:

- A. Identify onsite and offsite impacts and improvements by phase of development.
- B. Provide cost estimates for all improvements.

II.5.4.1.9 Existing Conditions

This section summarizes the operation of the existing transportation network in the project study area for the key freeway segments, street segments, and intersections.

Following are brief descriptions of the existing streets in the project area.

A. Interstate 805

I-805 is a north-south freeway, which originates in South County and terminates at its connection with the I-5 Freeway near Del Mar, California. Local interchanges in the project vicinity are at Olympic Parkway, Telegraph Canyon Road, and East H Street. I-805 is generally an eight-lane freeway between I-805 and SR-54 with auxiliary lanes present between some interchanges. LL&G determined that most of the study area freeway mainline segments are calculated to currently operate at LOS D or better in both northbound and southbound directions in the AM and PM peak hours. One freeway

segment, however, between East “H” Street and Telegraph Canyon Road operates at an LOS E during the PM peak hour.

B. Existing and Planned City Street System

The following provides a brief description of the existing and planned street system in the vicinity of the project area. This area roughly encompasses the Otay Ranch and adjacent areas between I-805 to the west, lower Otay Reservoir to the east, almost to East H Street on the north and Main Street to the south (see Exhibit 6).

- **Telegraph Canyon Road/Otay Lakes Road**

Telegraph Canyon Road/Otay Lakes Road provides east-west access through the northern portions of the study area. Telegraph Canyon Road/Otay Lakes Road is classified as a Six-Lane Major west of Paseo del Rey, and as a Six-Lane Prime Arterial east of Paseo del Rey in the City of Chula Vista Circulation Plan. Today, it is generally a six-lane facility, which transitions into a Class I Collector to the east of Hunte Parkway. Bike lanes exist on both sides of the road and bus stops are located intermittently along Telegraph Canyon Road /Otay Lakes Road. On-street parking is prohibited. The posted speed limit is 40 mph from I-805 to Crest Drive/Oleander Avenue, 45 mph from Crest Drive/Oleander Avenue to Old Telegraph Canyon Road, and 50 mph from Old Telegraph Canyon Road to Hunte Parkway.

- **Palomar Street**

Palomar Street is classified as a Four-Lane Major Street in the City of Chula Vista Circulation Plan. Currently, it is a four-lane divided road. On-street parking is prohibited. The posted speed limit is 35 mph and bike lanes are provided.

- **Olympic Parkway**

Olympic Parkway is classified as a Six-Lane Prime Arterial from I-805 to Hunte Parkway, and as a Four-Lane Major east of Hunte Parkway in the City of Chula Vista Circulation Plan. On-street parking is prohibited. The posted speed limit is 45 mph. Bike Lanes are provided. The section of Olympic Parkway from La Media Road to Hunte Parkway was recently completed and is open to traffic. A raised median is provided along Olympic Parkway.

- **Oleander Avenue**

Oleander Avenue is classified as a Class II Collector in the City of Chula Vista Circulation Plan. Currently, Oleander is a two-lane undivided roadway with two lanes of travel. Bike lanes are not provided. Curbside parking is permitted. The posted speed limit is 25 mph.

- **Medical Center Drive**

Medical Center Drive is classified as a Class I Collector in the City of Chula Vista Circulation Plan and currently provides four lanes of travel. Bike lanes exist on both sides of the street and curbside parking is prohibited. The posted speed limit is 25 mph. Medical Center Drive becomes Brandywine Avenue south of E. Palomar Street.

- **Brandywine**

Brandywine Avenue is classified as a Class I Collector in the City of Chula Vista Circulation Plan and currently provides four lanes of travel narrowing to two lanes with a two-way turn lane, just north of Main Street. Bike lanes exist on both sides of

the street and curbside parking is generally prohibited except in the two-lane section of Brandywine Avenue. The posted speed limit is 25 mph.

- **Paseo Ranchero**

Paseo Ranchero is classified as a Class I Collector in the City of Chula Vista Circulation Plan and becomes Heritage Road south of Telegraph Canyon Road. Currently, Paseo Ranchero is an undivided roadway with four lanes of travel and a center two-way turn lane. Bike lanes exist today on both sides of the road and curbside parking is prohibited. The posted speed limit is 40 mph.

- **Heritage Road**

Heritage Road is classified as a Six-Lane Prime Arterial in the City of Chula Vista Circulation Plan. Heritage Road currently ends at Olympic Parkway and is a six-lane prime arterial. Bike lanes exist today on both sides of the road; therefore curbside parking is prohibited. The posted speed limit is 40 mph.

- **La Media Road**

La Media Road is classified as a Six-Lane Prime Arterial in the City of Chula Vista Circulation Plan. Currently, La Media Road terminates at Birch Road. Six lanes of travel with a raised median are currently provided. Bike lanes exist today on both sides of the road; therefore curbside parking is prohibited. The posted speed limit is 40 mph.

- **Eastlake Parkway**

Eastlake Parkway is classified as a Four-Lane Major Street in the City of Chula Vista Circulation Plan, between north of Otay Lakes Road to South of SDG&E easement and as a Six-Lane Major Road south of the SDG&E easement in Eastlake Greens. Currently, it provides four lanes (two lanes in each direction). The new section of Eastlake Parkway from south of Clubhouse Drive to Olympic Parkway is has six lanes of travel. Eastlake Parkway currently terminates at Kestrel Falls. Bike lanes exist on either side of the road and curbside parking is prohibited.

- **Hunte Parkway**

Hunte Parkway is classified as a Four-Lane Major Arterial from Otay Lakes Road to Olympic Parkway in the City of Chula Vista Circulation Plan. Currently, it extends south of Otay Lakes Road to Olympic Parkway as a Four-Lane Major Street arterial with a posted speed limit of 45 mph. Bike lanes exist on either side of the road and curbside parking is prohibited. This facility connects to Olympic Parkway to the south. Construction of Hunte Parkway as a 6-lane Prime Arterial from Olympic Parkway to Eastlake Parkway is proposed.

- **Birch Road**

Birch Road is classified as a Six-Lane Major Street between La Media Road and SR 125 and a six-Lane Prime Arterial between SR 125 and Eastlake Parkway in the City of Chula Vista Circulation Plan. Currently, it does not exist. However, the section between La Media Road and Magdalena Avenue in Village 6 is under construction.

C. Existing Traffic Volumes

- **Daily Segment Volumes**

LL&G obtained existing Average Daily Traffic (ADT) volumes from the City of Chula Vista where available. Additionally, LL&G conducted three-day directional counts at the remaining segments. If Year 2000 or later ADT volumes were not available, the ADT was calculated from the peak hour intersection turning movement counts assuming the PM peak hour traffic is 10 percent of the daily traffic for some segments. Exhibit 6 depicts the existing ADT volumes.

- **Daily Segment LOS**

LL&G determined that the levels of service on all the key segments are operating better than LOS D except the following segments:

Telegraph Canyon Road

I-805 to Oleander Avenue (LOS F)

Oleander Avenue to Medical Center Drive (LOS E)

Paseo Ranchero to Otay Lakes Road (LOS D)

- **Peak hour intersection**

Peak hour intersection turning movement volumes were conducted in July and September 2003 at the following study area intersections. Peak hour data for intersections along Main Street, which were available from previous traffic studies, were also used.

- | | |
|--|---------------------------------------|
| 1. Telegraph Cyn Rd/I-805 SB Ramps | 12. Palomar Street/La Media Road |
| 2. Telegraph Cyn Rd/I-805 NB Ramps | 13. Olympic Parkway/I-805 SB Ramps |
| 3. Telegraph Cyn Rd/Oleander Avenue | 14. Olympic Parkway/I-805 NB Ramps |
| 4. Telegraph Cyn Rd/Medical Center Dr. | 15. Olympic Parkway/Oleander Avenue |
| 5. Telegraph Cyn Rd/Paseo Ranchero/Heritage Rd. | 16. Olympic Parkway/Brandywine Avenue |
| 6. Telegraph Canyon Road/Otay Lakes Road/La Media Road | 17. Olympic Parkway/Heritage Rd. |
| 7. Otay Lakes Road/Eastlake Parkway | 18. Olympic Parkway/La Media Rd. |
| 8. Otay Lakes Road/Hunte Parkway | 19. Olympic Parkway/Palomar St. |
| 9. Palomar Street/Oleander Avenue | 20. Olympic Parkway/Eastlake Parkway |
| 10. Palomar Street/Brandywine Avenue | 21. Olympic Parkway/Hunte Parkway |
| 11. Palomar Street/Heritage Road | 22. Main Street/I-805 SB Ramps |
| | 23. Main Street/I-805 NB Ramps |
| | 24. Main Street/Oleander Avenue |
| | 25. Main Street/Brandywine Avenue |

- **Peak Hour Intersection LOS**

The LL&G Traffic Analysis analyzed the existing AM and PM peak hour operations of the aforementioned 25 key signalized intersections. These intersections are calculated to currently operate at LOS D or better except the following:

1. Telegraph Canyon Rd/I-805 NB Ramps (LOS E)
2. Olympic Parkway/I-805 SB Ramps (LOS E)
3. Olympic Parkway/I-805 NB Ramps (LOS E)

II.5.4.1.10 Transit

Public transportation creation is an integral part of the Otay Ranch Community. The design of the project area promotes access to public transit and locates land uses in proximity to proposed transit stations. Chula Vista Transit (CVT) provides bus service through the Eastern Territories of the City of Chula Vista that can be extended to serve the project area. Regional transit plans also provide for Bus Rapid Transit (BRT) lines to serve the Otay Ranch Villages. The conceptual transit system plan for the project area is shown in Exhibit 7. The exhibit depicts several levels of service that are consistent with regional transit plans: a yellow line regional commuter service located on Olympic Parkway, a red line commuter service located on La Media Road and a blue line local Chula Vista transit on Heritage Road. Blue line or green line shuttle bus service can also be located through the Village core of the project. In addition, three transit stops are planned for the project.

The Metropolitan Transit Development Board (MTDB) and the City of Chula Vista recently completed the Southbay Transit First Study. The information in this document has been incorporated into city's pending General Plan Update. The study includes the project site; therefore, the following information is included in this document.

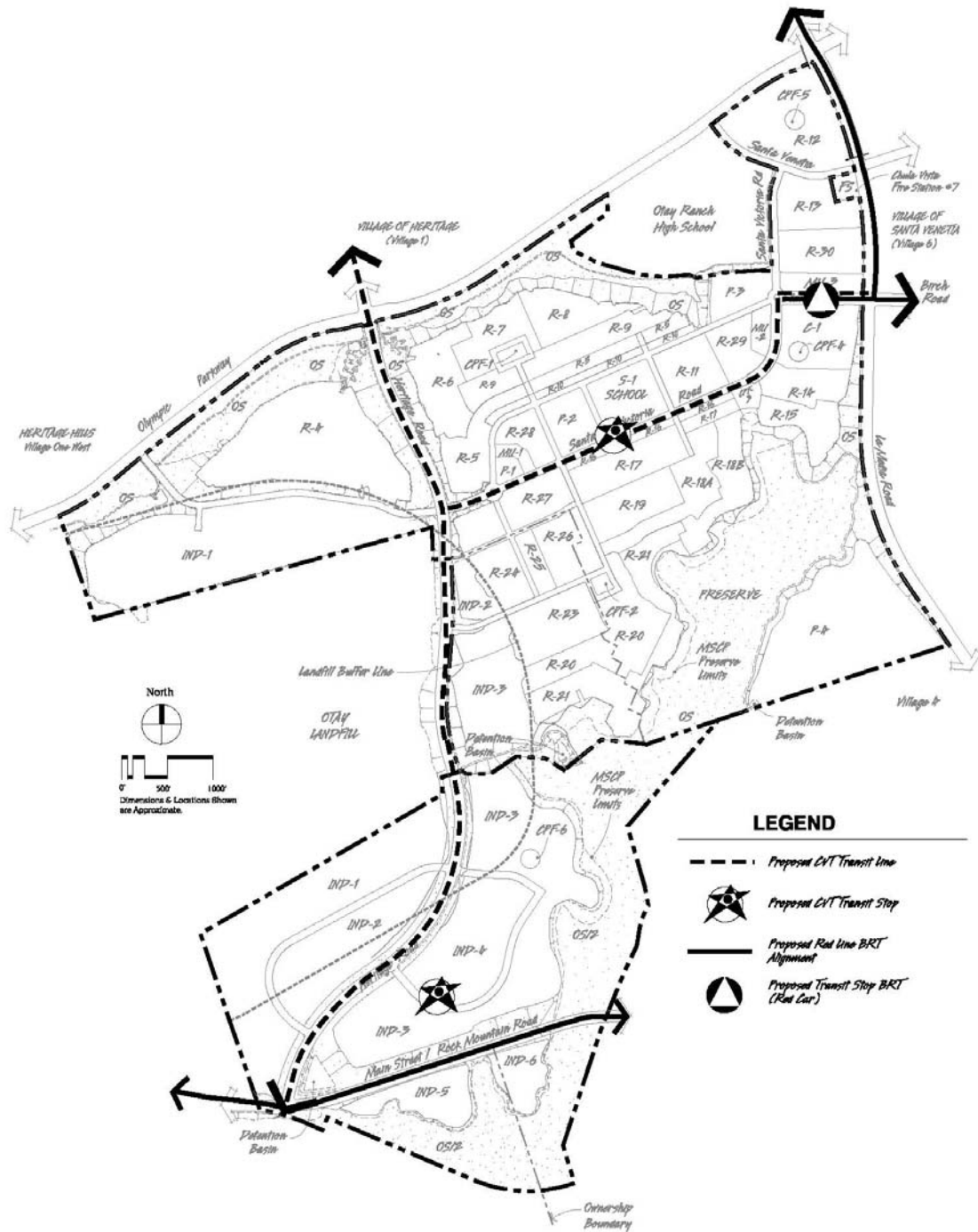
MTDB has developed the "Transit First" service concept to reduce the public's dependence upon the automobile. Transit and land use patterns should work together. The easy access to transit facilities in correlation with the service offered can make transit a viable travel mode alternative to the automobile, thus reducing traffic congestion. Currently, two percent of trips are conducted on public transit in the region. Efforts should be made to increase this travel mode split by making transit accessible and convenient. Additionally, providing transit facilities will meet the objectives of the City's CO₂ Reduction Plan which mentions transit as one of the action measures to reducing CO₂ emissions along with enhanced pedestrian connections to transit, increased housing density near transit, and site design with transit orientation.

The "Transit First" strategy includes a network of service types ranging from neighborhood shuttles serving short-distance trips, to higher-speed, limited stop routes for longer distance trips. The service types planned for the Otay Ranch are as follows:

- A. Yellow Car: Serves longer-distance trips (6+ miles), maintaining high average speeds (35-40 mph) with limited stops. Yellow Car routes would complement Red Car services to form the spine of the regional transit system. Yellow Car services would require extensive use of transit priority treatments such as dedicated running ways, queue jumpers, and signal priority. Yellow Car service is used in two ways:
 - Serving corridors where longer station spacing is justified based on links between major origins and destinations and land use patterns that lead to longer-distance trip making.
 - Serving as an overlay in selected Red Car corridors where a faster, more limited-stop service is justified (in addition to Red Car service) for high-volume, long-distance trip needs.
- B. Red Car: Serves medium-distance trips (1-9 miles), maintaining relatively high average speeds (20-25 mph) with limited stops. Red Car services are often linked to Blue Car service for local distribution. The current San Diego Trolley system and the County's express bus routes mostly operate as Red Car service. Red Car services would require use of transit priority treatments such as dedicated running ways, queue jumpers, and signal priority.

- C. Green Car: Serves community-level trip making that could include neighborhood circulators, feeder access to Yellow and Red Car service, and/or specialized fixed-route shuttles. Green Car services would likely use smaller shuttle vehicles. In some situations, Green Car services would benefit from dedicated running ways and queue jumpers.
- D. Blue Car: Serves short-distance trips (0-5 miles) with frequent stop spacing. Blue Car service provides basic mobility, albeit at low speeds (10-25 mph), on primarily local and arterial streets. Most of the current San Diego region bus system operates as Blue Car service.

The Metropolitan Transit Development Board of Directors has endorsed a “Tier One” Plan of proposed Yellow Car and Red Car alignments identified through the South Bay Transit First (SBTF) Study. These routes have the best chance of being implemented initially.



Public Transportation Concept Plan Exhibit 7

II.5.4.1.11 Trip Generation and Phasing

II.5.4.1.11.1 Project Trip Generation

LL&G analyzed two alternative projects for the project. The two alternatives consisted of a “Proposed Project” and the “Assumed Project.” Since the Assumed Project and the Proposed Project generate very similar amounts of traffic and the Assumed Project slightly more peak hour traffic, the Assumed Project was specifically analyzed as the “worst case” scenario in the LL&G Traffic Analysis. This PFFP uses the Assumed Project analysis from the LL&G Traffic Analysis.

Assumed Project

SANDAG trip generation rates were utilized by LL&G for their Traffic Analysis. Table C.9 shows the trip generation for the “Assumed Project” as analyzed by the LL&G Traffic Analysis. The project trip generation was calculated to generate a total of 73,546 daily trips, 7,528 trips (4,655 inbound and 2,873 outbound trips) in the AM peak hour and 8,836 trips (3,962 inbound and 4,874 outbound trips) in the PM peak hour.

Table C.9 Trip Generation Assumed Project													
LAND USE	QUANTITY	DAILY TRIP ENDS (ADT)		AM PEAK HOUR					PM PEAK HOUR				
		RATE	VOLUM	%OF ADT	IN:OUT SPLIT	VOLUME			%OF ADT	IN:OUT SPLIT	VOLUME		
						IN	OUT	TOTAL			IN	OUT	TOTAL
Village 2													
Single Family	994 DU	10 /DU	9,940	8%	3:7	239	556	795	10%	7:3	696	298	994
Multi Family	1,701 DU	8 /DU	13,608	8%	2:8	218	871	1,089	10%	7:3	953	408	1,361
Com'l	20.7 Ac.	700 /Ac	14,490	4%	6:4	348	232	580	10%	5:5	725	724	1,449
Neigh. Park	15.1 Ac.	5 /Ac	76	4%	5:5	2	2	4	8%	5:5	3	3	6
Com. Park	70 Ac.	50 /Ac	3,500	13%	5:5	228	227	455	9%	5:5	158	157	315
CPF	3.9 Ac.	30 /Ac	117	5%	6:4	4	2	6	8%	5:5	5	4	9
School	10.2 Ac.	90 /Ac	918	32%	6:4	176	118	294	9%	4:6	33	50	83
Industrial	84.6 Ac.	120 /Ac	10,152	14%	8:2	1,137	284	1,421	15%	3:7	457	1,066	1,523
Subtotal			52,801			2,352	2,293	4,645			3,030	2,710	5,740
Village 3 & PA 18B													
Industrial	171.0 Ac.	120 /Ac	20,520	14%	8:2	2,298	575	2,873	15%	3:7	923	2,155	3,078
CPF	7.5 Ac.	30 /Ac	225	4%	5:5	5	5	10	8%	5:5	9	9	18
Subtotal			20,745			2,303	580	2,883			932	2,164	3,096
Total Assumed Project			73,546			4,655	2,873	7,528			3,962	4,874	8,836

Notes:

1. Generation rates obtained from the SANDAG Brief Guide (April 2002).
2. Trip-ends are one-way traffic movements, either entering or leaving.

SOURCE: LL&G Traffic Analysis.

A large portion of the trips generated by the project are residential trips. The project is designed in such fashion as to keep a portion of the traffic internal to the project since schools, commercial uses and recreational uses are planned within the project. Therefore, calculations were conducted by LL&G to determine the amount of project traffic that would

remain internal to the project area and therefore not add traffic to the regional street system. Table C.10 summarizes the internal trip generation calculations with a base assumption that given the make-up of the non-residential uses, about 15% of the residential trips would remain internal to the site. Subtracting the internal trip generation from the total trip generation yields the external trip generation. As seen in this Table C.10, the project is calculated to add 66,482 external trips with 7,064 internal trips.

Table C.10				
Internal Trips for Assumed Project				
Land Use	Total Daily Trips	% of Trips which are Internal	Internal Trips (Daily)	External Trips (Daily)
Residential				
Single Family	9,940	15%	1,491	8,449
Multi Family	13,608	15%	2,041	11,567
Subtotal Residential	23,548		3,532	20,016
Non-Residential				
Commercial	14,490	15%	2,174	12,317
Neighborhood Park	76	66%	50	26
Community Park	3,500	22%	770	2,730
Community Purpose Facility	342	50%	171	171
School	918	40%	367	551
Industrial	30,672	0%		30,672
Preserve				
Subtotal Non-Residential	49,998		3,532	44,466
Total Project	73,546		7,064	66,482

SOURCE: LL&G Traffic Analysis.

Phasing Reconciliation

The LL&G Traffic Analysis for the “Assumed Project” was analyzed in four phases, three five-year increments and one fifteen-year increment each as follows:

Table C.11	
ADT Phasing Summary	
	Assumed Project
2005	4,200 ADT
2010	46,762 ADT
2015	53,938 ADT
2030	73,546 ADT

The phasing presented in the SPA Plan is non-sequential and is not consistent with the ADT Phasing presented in this PFFP. Table C.12 calculates the trips generated by each phase and land use and the cumulative trips for the “Assumed Project.” The circulation system addressed and recommended in the LL&G Traffic Analysis includes all improvements based on average daily trips (ADT) and the trigger points for needed improvements.

Table C.12 Phasing for Assumed Project													
Land Use	Quantity	Daily Trip Ends (ADT)		AM Peak Hour					PM Peak Hour				
				% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
		Rate	Volume			In	Out	Total			In	Out	Total
Year 2005													
Single Family	340 DU	10/DU	3,400	8%	3:7	82	190	272	10%	7:3	238	102	340
Multi Family	100 DU	8/DU	800	8%	2:8	13	51	64	10%	7:3	56	24	80
Subtotal 2005			4,200			94	242	336			294	126	420
Year 2010													
Single Family	994 DU	10/DU	9,940	8%	3:7	239	557	795	10%	7:3	696	298	994
Multi Family	1,587 DU	8/DU	12,696	8%	2:8	203	813	1,016	10%	7:3	889	381	1,270
Commercial	20.7 Ac.	700 /Ac	14,490	4%	6:4	348	232	580	10%	5:5	725	725	1,449
Comm. Park	70.0 Ac.	50 /Ac	3,500	13%	5:5	228	227	455	9%	5:5	158	157	315
Neigh Park	15.1 Ac.	5 /Ac	76	4%	5:5	2	2	3	8%	5:5	3	3	6
CPF	11.4 Ac.	30 /Ac	342	5%	6:4	10	7	17	8%	5:5	5	5	10
School	10.2 Ac.	90 /Ac	918	32%	6:4	176	118	294	9%	4:6	33	50	83
Industrial	40 Ac.	120 /Ac	4,800	14%	8:2	538	134	672	15%	3:7	216	504	720
Subtotal 2010			46,762			1,743	2,088	3,831			2,724	2,122	4,846
Year 2015													
Single Family	994 DU	10/DU	9,940	8%	3:7	239	557	795	10%	7:3	696	298	994
Multi Family	1,701 DU	8/DU	13,608	8%	2:8	218	871	1,089	10%	7:3	953	408	1,361
Commercial	20.7 Acres	700 /Ac	14,490	4%	6:4	348	232	580	10%	5:5	725	725	1,449
Comm. Park	70.0 Acres	50 /Ac.	3,500	13%	5:5	228	227	455	9%	5:5	158	157	315
Neigh Park	15.1 Acres	5 /Ac	76	4%	5:5	2	2	3	8%	5:5	3	3	6
CPF	11.4 Acres	30 /Ac	342	5%	6:4	10	7	17	8%	5:5	3	5	10
School	10.2 Acres	90 /Ac	918	32%	6:4	176	118	294	9%	4:6	33	50	83
Industrial	92.2 Acres	120 /Ac	11,064	14%	8:2	1,239	310	1,549	15%	3:7	498	1,162	1,660
Subtotal 2015			53,938			2,459	2,322	4,781			3,069	2,807	5,877
Year 2030													
Single Family	994 DU	10/DU	9,940	8%	3:7	239	557	795	10%	7:3	696	298	994
Multi Family	1,701 DU	8/DU	13,608	8%	2:8	218	871	1,089	10%	7:3	953	408	1,361
Commercial	20.7 Ac.	700 /Ac	14,490	4%	6:4	348	232	580	10%	5:5	725	725	1,449
Comm. Park	70.0 Ac.	50 /Ac	3,500	13%	5:5	228	227	455	9%	5:5	158	157	315
Neigh Park	15.1 Ac.	5 /Ac	76	4%	5:5	2	2	3	8%	5:5	3	3	6
CPF	11.4 Ac.	30 /Ac	342	5%	6:4	10	7	17	8%	5:5	14	14	27
School	10.2 Ac.	90 /Ac	918	32%	6:4	176	118	294	9%	4:6	33	50	83
Industrial	255.6 Ac.	120 /Ac	30,672	14%	8:2	3,435	859	4,294	15%	3:7	1,380	3,221	4,601
Subtotal 2030			73,546			4,655	2,871	7,526			3,960	4,875	8,835

SOURCE: LL&G Traffic Analysis.

Network Analysis

It was necessary to estimate future traffic volumes for several study years in order to determine if the planned circulation network or system could accommodate these volumes. As previously discussed, the Series 10.0, SANDAG 2030 City/County Forecast Traffic Model was used to estimate these volumes. The traffic model outputs freeway and street segment ADTs. These ADTs were utilized directly as outputted by the model. In addition, it was also necessary to estimate peak hour intersection volumes. The LL&G Traffic Analysis details the methodology to determine future traffic volumes.

The aforementioned 7 Scenarios that were analyzed in the LL&G Traffic Analysis have different assumptions concerning the study area, land use and roadway network. LL&G developed peak hour intersection and daily segment analyses for each scenario. The LL&G Traffic Analysis provides a detailed description of the 7 scenarios.

Network Performance Assessment Process

The LL&G Traffic Analysis included the traffic model projections for cumulative development projects. The report also identified the number of daily trips for the phasing of developments on key roadway segments in order to perform the analysis of network performance based on daily segment LOS. This performance evaluation was performed for roadway and freeway segments. A review of peak hour intersection operations was also performed which required the application of peak hour factors to average daily traffic volumes to develop peak hour turning movements at each of the key project intersections.

Temporary Main Street and Heritage Road Intersection Analysis

The LL&G Traffic Analysis included an assessment of the temporary Main Street and Heritage Road intersection. The purpose of the traffic assessment was to determine if a temporary Main Street and Heritage Road intersection can accommodate all of the residential units and a portion of industrial uses planned within the project. The minimum lane configuration for this interim condition was determined using LOS D as the minimum intersection LOS. The design of the permanent intersection will need to provide LOS C operations. The design assumes the maximum acceptable single left-turn volume is 300 vehicles per hour (vph), as stated in the Manual on Uniform Traffic Control Devices (MUTCD). The assumed maximum acceptable single right-turn volume was assumed to be 400 vph, per City standards.

LL&G used the SANDAG Year 2010 Village 2/Village 7 traffic model as the basis for the traffic assessment. The following two network scenarios were analyzed to determine the recommended intersection geometry at the Main Street/Heritage Road intersection. Year 2010 land use and network assumptions were used for both scenarios:

- Network Scenario A: No Rock Mountain Road east of Heritage Road other than an access to the quarry.
- Network Scenario B: With Rock Mountain Road built between Heritage Road and La Media Road.

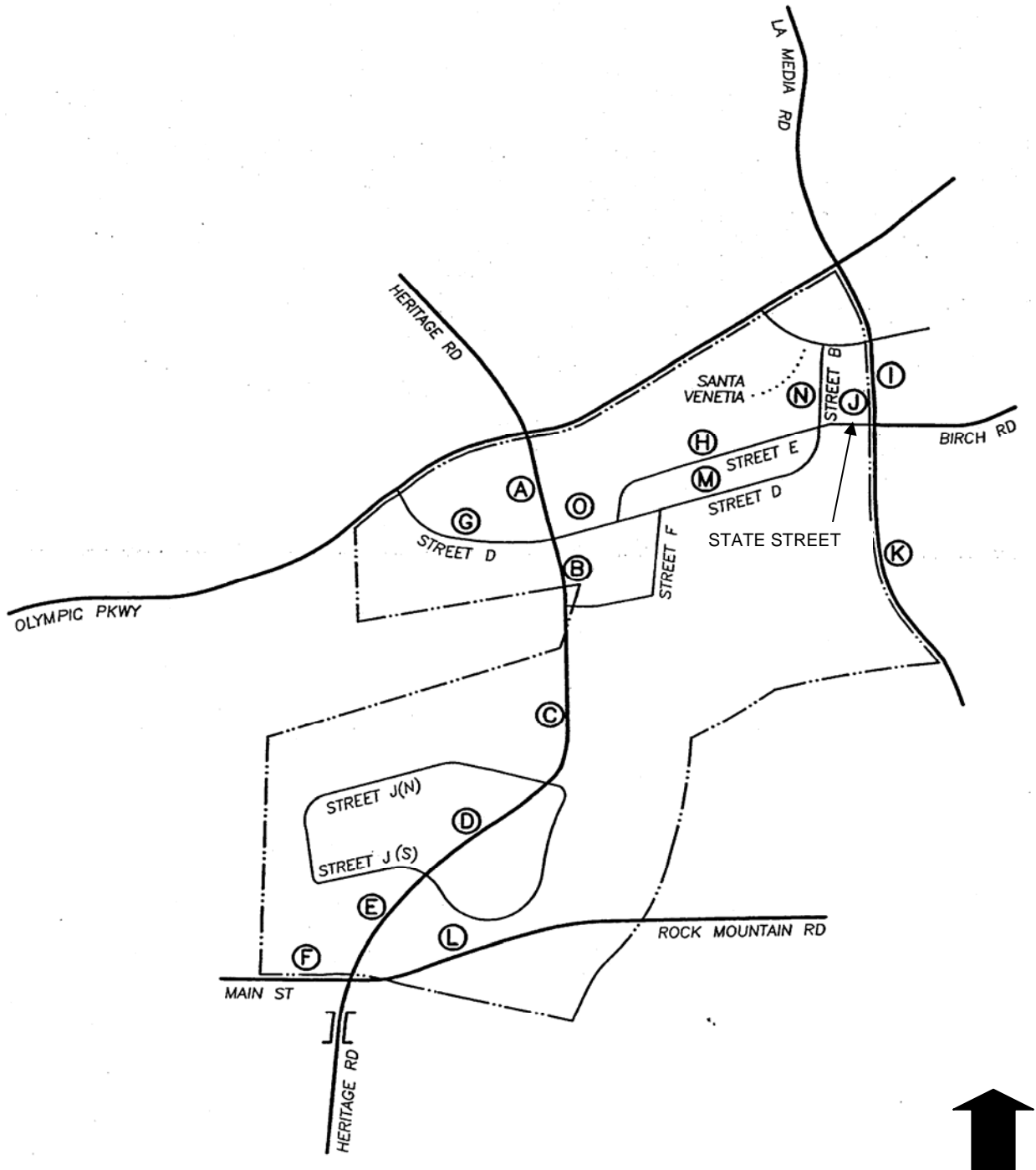
The Scenario A analysis concluded that with the intersection configuration, without Rock Mountain Road east of Heritage Road, all proposed land uses within Village 2 including the industrial uses (87.9 Acres) and an additional 61.3 acres of industrial land uses within Village 3 could be built.

This is the same as 4,216 Equivalent Dwelling Units (EDUs) as follows:

986 Single Family Units =	986 EDUs
1,800 Multi-Family Units =	1,440 EDUs
<u>149.2 Acres of Industrial (Assuming 120.ADT/Acre) =</u>	<u>1,790 EDUs</u>
Total =	4,216 EDUs

The non-residential land uses within the project other than industrial uses, such as park, CPF, school and commercial land uses would not count towards the EDU threshold since these uses are local serving and actually are a traffic benefit since they capture traffic within the Village.

The Scenario B analysis indicates that with the intersection configuration with Rock Mountain Road completed between Heritage Road and La Media Road, all land uses within the project including residential units, park, CPF, school, commercial and industrial land uses could be implemented.



No Scale

PFFP Roadways⁹ Exhibit 9

⁹ Source: LL&G

11.5.4.1.11.2 Project Phasing

The phasing shown herein is consistent and conforms to the phasing contained in the LL&G Traffic Analysis. Development of the project contributes 4,200 daily trips in 2005, 46,762 daily trips by 2010, 53,938 daily trips by 2015 and 73,546 daily trips by 2030. The cumulative total 73,546 daily trips will be loaded onto the circulation network at the build-out of the project.

The LL&G Traffic Analysis indicates that there is one roadway, Heritage Road connected southward to Main Street whose need is based on traffic generation. LL&G determined that the other roadways within and adjacent to the project would need to be built when the land uses fronting the roads are developed or in order to provide a sufficient number of access points based on the City's Subdivision Manual. Table C.13 summarizes the PFFP thresholds.

A. Residential Unit Thresholds

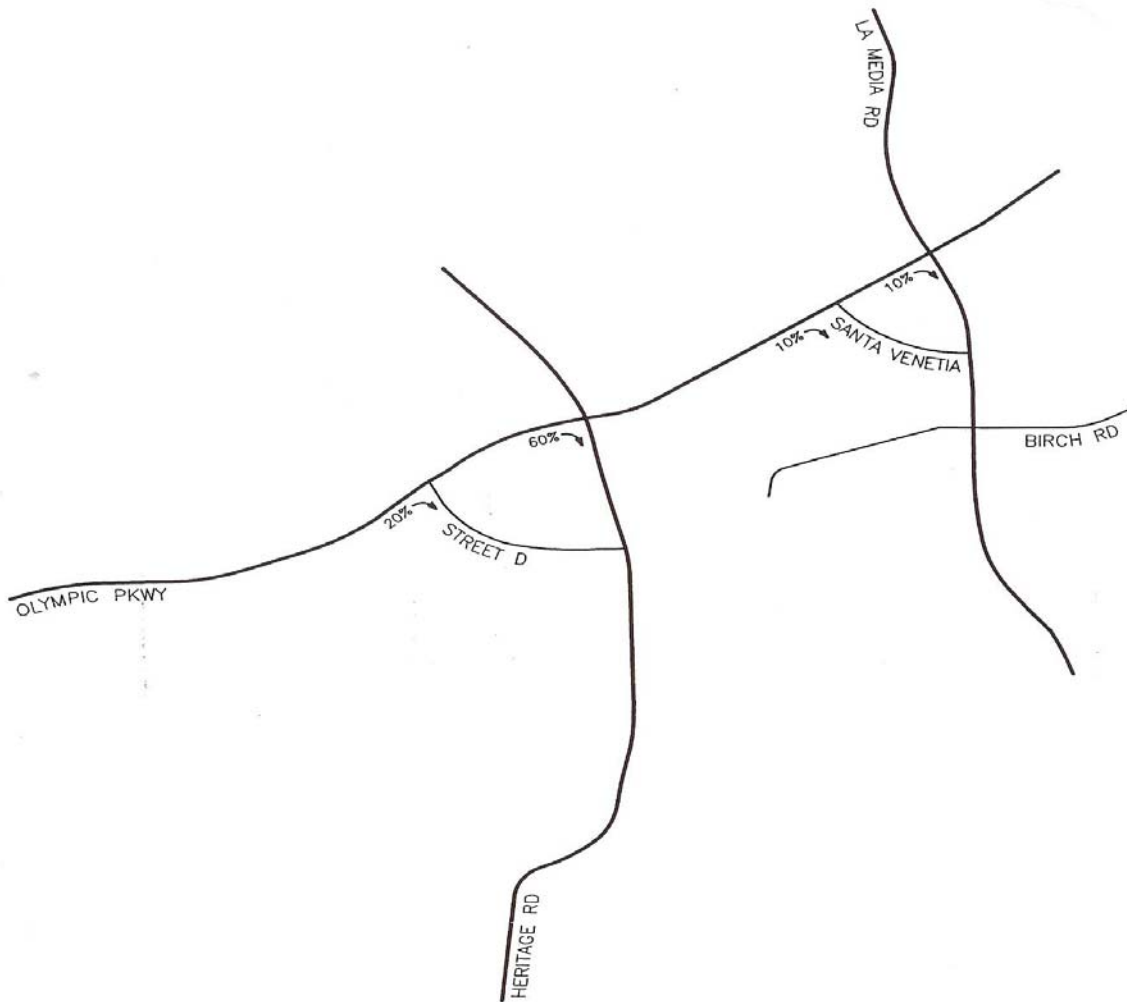
Based on LL&G's knowledge of the area and an inspection of the project access points, they determined that the "constraint" in the roadway system that would result in the need for a southward connection would be either the AM peak hour left turn onto Olympic Parkway from one of four project access points (Street D, Heritage Rd, Santa Venetia or La Media Rd), or the PM peak hour right-turn from Olympic Parkway onto Heritage Road. Furthermore, assuming the northbound approach at each of the four access points provides dual left turn lanes, the volume constraint would either be when the northbound left turn peak hour volume reaches 600 or the peak hour eastbound right-turn volume reaches 400 (the theoretical capacity of a right-turn lane). By inspection, LL&G determined that the PM (inbound) peak hour would "fail" prior to the AM peak hour. Forty-five percent (45%) of project traffic is expected to be oriented to/from the west on Olympic Parkway.

LL&G anticipated the project's inbound distribution from Olympic Parkway and assumed access to the site is from La Media Road. Exhibit 10 shows the breakdown of the four access points for traffic oriented eastbound from Olympic Parkway only. This figure shows that the majority of inbound traffic is expected to use Heritage Rd since it will be out of direction for the majority of the residential uses to utilize Santa Venetia or La Media Rd to reach their home. LL&G concluded that the eastbound right turn from Olympic Parkway onto Heritage Road is the PFFP constraint. It is assumed that a second eastbound right-turn lane cannot be provided for biological, slope and safety reasons.

LL&G concluded that the capacity of the aforementioned intersection for PM Peak Hour right-turns is 217. Since 1,276 units would generate 217 PM peak hour eastbound right turns at the Olympic Parkway/Heritage Road intersection, Heritage Road (Roadways B, C, D and E) should be connected between Olympic Parkway and southwards to Main Street and Main Street westerly to existing (Roadway F) once 1,276 EDUs within Village 2 are built. Based on SANDAG rates 106 acres of industrial development is the same as 1,276 EDUs.

B. Industrial Acreage Threshold

The LL&G Traffic Analysis indicates that the volume at the Main Street/Heritage Road intersection would exceed City capacity standards for dual left turn lanes (600 vehicle per hour) or right turn lanes (400 vehicle per hour) if the industrial portion of the project did not have access to Olympic Parkway. Based on SANDAG rates, LL&G determined that



No Scale

Project Inbound Distribution From Olympic Parkway Exhibit 10

industrial uses generate 120 ADT/acre, 13.44 AM inbound trips/acre and 12.6 PM outbound trips/acre. If all industrial traffic was oriented to/from the west on Main Street from Heritage Road, **31.7** acres of industrial development would generate 400 PM peak hour southbound right-turn vehicles, and 41.6 acre would generate 600 AM peak hour eastbound left-turn vehicles. Therefore, access Northward on Heritage Road to Olympic Parkway is needed once **31.7** acres of industrial land uses are developed. It may be necessary to provide northward access to Olympic Parkway with any industrial development if it is determined that access only to the south to Main Street is not sufficient from a safety standpoint.

II.5.4.1.12 Adequacy Analysis

The City of Chula Vista created the Guidelines For Traffic Impact Studies in February 2001. This document establishes written guidelines for identification of project traffic impacts in Environmental Impact Report documents. Prior to the establishment of the guidelines, the City of Chula Vista hired BRW to review criteria that was being utilized by the City of San Diego and traffic impact study guidelines recommended by the San Diego Traffic Engineer's Council (SANTEC) / Institute of Transportation Engineers (ITE). The objective was to determine the applicability of these standards to developments and facilities within the City of Chula Vista, and develop a specific set of standards for the City of Chula Vista based on this review. The City of San Diego and SANTEC/ITE standards were used to reevaluate several completed studies in the City of Chula Vista to determine potential changes in the identification of project impacts. Results of this evaluation were communicated to the City of Chula Vista department heads and staff through a series of workshops. Discussions, comments and recommendations precipitated from these workshops provided the foundation for the guidelines.

The guidelines provide written criteria for determining the need and scope of traffic studies and identifying impacts. The use of these guidelines ensures uniformity in the preparation and review of traffic studies for developments within the City of Chula Vista. In addition, the guidelines help determine timelines for the implementation of specific improvements to address identified deficiencies.

A. Determining When A Study Is Needed

In conformance with requirements of the Congestion Management Program (CMP), an analysis of CMP freeways and arterials will be required for any project that generates 2,400 daily, or 200 peak hour trips (As detailed in the 1991 CMP).

For those developments that do not satisfy the requirements for a CMP analysis, a traffic study may be required based on direction provided by the City Engineer and the Environmental Review Coordinator.

B. Methodology

1. Study Area Definition

- a. Volume Thresholds for Study of CMP Freeway Facilities: All freeway segments are by definition included in the CMP network. All freeway mainline segments to which the proposed project will add 2400 total trips (Average Daily Trips or ADT) or 150 or more peak hour trips in either direction must be analyzed.
- b. Volume Thresholds for Study of CMP Arterial Facilities: All CMP arterial segments, including Regionally Significant Arterials (RSA) and other CMP arterial segments and intersections (including freeway on/off ramp intersections), to which the proposed project will add 800 or more total trips (ADT) or 50 or more peak hour trips in either direction must be analyzed.
- c. Volume Thresholds for Local Roadways and Intersections: Traffic studies will be required to review those local and collector roadway facilities that are not included in the CMP network based on direction provided by the City Engineer.

2. Analysis Scenarios

Each of the study area freeway segments, roadway segments, and intersections must be analyzed for the following scenarios:

- a. Existing Conditions
- b. Existing Conditions + Proposed Project
- c. Existing Conditions + Approved and Pending Projects + Proposed Project (Only for non-master planned projects)
- d. Horizon Years (Usually defined as five-year incremental study years for project, i.e. 2005, 2010, 2015, & 2020. However, final determination on years to be studied may vary based on direction of the City Engineer)
- e. Regional Buildout Year + Proposed Project

Additional scenarios may be required depending on the size and phasing of any proposed development. For each analyzed scenario, peak hour analysis will include the AM and PM peaks. At the direction of the City Engineer, special studies of midday peak or other off-peak periods may be required.

3. Growth Management Oversight Committee (GMOC) Near-Term Analysis

As determined by the City Engineer, analysis of roadway segments under near-term conditions (Years 0-4) may be conducted using the methodology described in Chapter 11 (Arterial Streets) of the most recent version of the Highway Capacity Manual, which determines segment level of service based on speed, as detailed in the Significance Criteria below. Classification of facilities and definition of segment lengths must be consistent with the City's current Growth Management Traffic Monitoring Program. The Threshold Standard for these arterial analyses requires the maintenance of LOS C or better as measured by average travel speeds except that LOS D can occur for no more than any two hours of the day. Thus, if LOS D conditions are determined for any period of two (2) hours, additional analysis may be required along these high volume segments based on direction provided by the City Engineer.

For planned arterial facilities that are not currently included in the current Traffic Monitoring Program, the definition of segment length and facility classification will be based on direction provided by the City Engineer.

C. Significance Criteria

Project impacts will be defined as either project specific impacts or cumulative impacts. Project specific impacts are those impacts for which the addition of project trips result in an identifiable degradation in LOS on freeway segments, roadway segments, or intersections, triggering the need for specific project-related improvement strategies. Cumulative impacts are those in which the project trips contribute to a poor level of service, at a nominal level.

Study horizon year as used herein is intended to describe a future period of time in the traffic studies, which corresponds to SANDAG's traffic model years, and are meant to synchronize study impacts to be in line with typical study years of 2005, 2010, 2015 and 2020.

Criteria for determining whether the project results in either project specific or cumulative impacts on freeway segments, roadway segments, or intersections are as follows:

1. Short-term (Study Horizon Year 0 to 4)

For purposes of the short-term analysis roadway sections may be defined as either links or segments. A link is typically that section of roadway between two adjacent Circulation Element intersections and a segment is defined as that combination of contiguous links used in the Growth Management Plan Traffic Monitoring Program. Analysis of roadway links under short-term conditions may require a more detailed analysis using the GMOC methodology if the typical planning analysis using volume to capacity ratios on an individual link indicates a potential impact to that link. The GMOC analysis uses the Highway Capacity Manual (HCM) methodology of average travel speed based on actual measurements on the segments as listed in the Growth Management Plan Traffic Monitoring Program.

a. Intersections

1. Project specific impact if both the following criteria are met:
 - a) LOS E or LOS F.
 - b) Project trips comprise 5% or more of entering volume.
2. Cumulative impact if only a) above is met.

b. Street Links/Segments

If the planning analysis using the volume to capacity ratio indicates LOS C or better, there is no impact. If the planning analysis indicates LOS D, E or F, the GMOC method should be utilized. The following criteria would then be utilized.

1. Project specific impact if all the following criteria are met:
 - a) LOS D for more than 2 hours or LOS E/F for 1 hour
 - b) Project trips comprise 5% or more of segment volume.
 - c) Project adds greater than 800 ADT to the segment.
2. Cumulative impact if only a) above is met.

c. Freeways

1. Project specific impact if both the following criteria are met:
 - a) Freeway segment LOS is LOS E or LOS F
 - b) Project comprises 5% or more of the total forecasted ADT on that freeway segment.
2. Cumulative impact if only a) above is met.

2. Long-term (Study Horizon Year 5 and later)

a. Intersections

1. Project specific impact if both the following criteria are met:
 - a) Level of service is LOS E or LOS F.
 - b) Project trips comprise 5% or more of entering volume.
2. Cumulative impact if only a) above is met.

b. Street Segments

Use the planning analysis using the volume to capacity ratio methodology only. The GMOC analysis methodology is not applicable beyond a four-year horizon.

1. Project specific impact if all three of the following criteria are met:
 - a) Level of service is LOS D, LOS E, or LOS F.
 - b) Project trips comprise 5% or more of total segment volume.
 - c) Project adds greater than 800 ADT to the segment.
 2. Cumulative impact if only a) above is met. However, if the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.
 4. Notwithstanding the foregoing, if the impact identified in paragraph 1 above occurs at study horizon year 10 or later, and is offsite and not adjacent to the project, the impact is considered cumulative. Study year 10 may be that typical SANDAG model year which is between 8 and 13 years in the future. In this case of a traffic study being performed in the period of 2000 to 2002, because the typical model will only evaluate traffic at years divisible by 5 (i.e. 2005, 2010, 2015 and 2020) study horizon year 10 would correspond to the Sandag model for year 2010 and would be 8 years in the future. If the model year were less than 7 years in the future, study horizon year 10 would be 13 years in the future.
 5. In the event a direct identified project specific impact in paragraph 1 above occurs at study horizon year 5 or earlier and the impact is offsite and not adjacent to this project, but the property immediately adjacent to the identified project specific impact is also proposed to be developed in approximately the same time frame, an additional analysis may be required to determine whether or not the identified project specific impact would still occur if the development of the adjacent property does not take place. If the additional analysis concludes that the identified project specific impact is no longer a direct impact, then the impact shall be considered cumulative.
- c. Freeways
1. Project specific impact if both the following criteria are met:
 - a) Freeway segment LOS is LOS E or LOS F
 - b) Project comprises 5% or more of the total forecasted ADT on that freeway segment.
 2. Cumulative impact if only a) above is met.

II.5.4.1.13 Cost & Financing Traffic Improvements

A. Street Improvements

The following table summarizes the major street improvements as it relates to Otay Ranch Village 2, 3, portion of Village 4 development phasing based on the project LL&G Traffic Analysis dated November 22, 2005.

TABLE C.13 Estimated Traffic Improvement Thresholds and Costs Public facilities required to be constructed by Otay Ranch Village 2, 3, portion of Village 4¹⁰			
Facility¹¹	Description¹²	Threshold	Roadway Costs¹³
A.	Heritage Road between Olympic Parkway and Santa Victoria (Street "D")	A/F ^a , 1 st unit in Village 2 west of Heritage Road or 1,008 EDUs ^b in Village 2 overall	\$2,000,000
B.	Heritage Road: Santa Victoria (Street "D") to Santa Lisa (Street "F")	A/F ^a , 1,276 EDUs ^b overall or 380 EDUs (31.7 acres of industrial) in Village 3	\$1,100,000
C.	Heritage Road: Santa Lisa (Street "F") to Street "J" North	A/F ^a , 1,276 EDUs ^b overall or 380 EDUs (31.7 acres of industrial) in Village 3	\$2,800,000
D.	Heritage Road: Street "J" North to Street "J" South ²	A/F ^a , 1,276 EDUs ^b overall or 380 EDUs (31.7 acres of industrial) in Village 3	\$2,200,000
E.	Heritage Road: Street "J" South to Main Street ^c	A/F ^a , 1,276 EDUs ^b overall or 380 EDUs (31.7 acres of industrial) in Village 3	\$1,750,000
F.	Main Street: Heritage Road to connect to existing improvements	A/F ^a , 1,276 EDUs ^b overall or 380 EDUs (31.7 acres of industrial) in Village 3	\$1,500,000
G.	Santa Victoria (Street "D"): Olympic Parkway to Heritage Road	1 st EDU in Village 2 west of Heritage Road	\$3,000,000
H.	Santa Diana (Street "E"): Santa Victoria (Street "D") to State Street	A/F ^a or 1,008 EDUs ^b in Village 2 overall	\$2,200,000
I.	La Media Rd: Santa Venetia to Birch Rd	1 st EDU in Village 2	\$2,000,000
J.	State Street (Street "E"): Santa Victoria (Street "B") to La Media Road	1 st EDU in Village 2	\$650,000
K.	La Media Road: Birch Road to Park P-4 Entrance	AF, with Park development	\$5,800,000
L.	Rock Mountain Rd: East of Heritage Rd and/or Main St w/in the SPA boundaries	A/F ^a , 1 st EDU ^b in Village 3/PA 18B, 2,090 EDUs in Village 2 overall	\$3,300,000
M.	Santa Victoria (Street "D"): Santa Diana to State Street	A/F ^a or 1,008 EDUs ^b in Village 2 overall	\$3,000,000
N.	Santa Victoria (Street "B"): Santa Venetia to Santa Diana (Street "E")	1 st EDU in Village 2	\$1,200,000
O.	Santa Victoria (Street "D"): Heritage Road to Santa Diana (Street "E")	A/F ^a or 1,008 EDUs ^b in Village 2 overall	\$500,000
Total Costs			\$33,000,000
Footnotes: a. A/F: Access or Frontage - Roadways needed for continuity and minimum access: roadway segment as determined by the City Engineer, is triggered with the first final map which has frontage on the roadway, or if roadway is required to provide access. b. In terms of Equivalent Dwelling Units (EDU's) 1,276 residential units represents 1,276 equivalent dwelling units and 106 acres of industrial represents 1,276 EDU's based on SANDAG rates. Commercial uses are not included in the EDU calculations. c. Interim Layout for Heritage Road and Main Street.			

¹⁰ Developer shall agree to construct and to secure the facility prior to the Final Map

¹¹ The Developer will be required to process a Joint Use Agreement with the City of Chula Vista and any Agency for streets that cross existing easements.

¹² Construction of intersections are included. All intersections will be constructed with traffic signals.

¹³ Roadway costs estimates are based on City of Chula Vista Eastern Area Developer Impact Fees for streets, July 2002. Actual roadway costs may vary.

B. Transportation Development Impact Fee (TDIF)

The project is within the boundaries of the TDIF program and, as such, the project is subject to the payment of the fees at the rates in effect at the time building permits are issued. However, the improvements identified on Table C.13 will be required to be constructed according to the approved phasing plan. In this case, the TDIF ordinance allows for the issuance of credit in lieu of fees when an eligible facility is constructed by the project. If the total eligible construction cost amounts to more than the total required TDIF fees as indicated below, the owner/developer may be given credits toward future building permits outside of the SPA area.

The current Transportation Development Impact Fee (TDIF) Ordinance sets forth the calculation of development impact fees. This PFFP uses the CVMC Chapter 3.54 as the basis for the estimated TDIF fees. Table B.4 below illustrates the current fee schedule:

Table C.14 TDIF Schedule		
Land Use Classification		TDIF Rate
Residential (Low)	0-6 dwelling units per gross acre	\$10,050 per DU
Residential (Med.)	6.1-18 dwelling units per gross acre	\$8,040 per DU
Residential (High)	>18.1 dwelling units per gross acre	\$6,030 per DU
Senior housing		\$4,020 per DU
Residential mixed use	>18 dwelling units per gross acre	\$4,020 per DU
Commercial mixed use	< 5 stories in height	\$160,800 per 20,000 sq. ft.
General commercial (acre)		\$160,800 per acre
Regional commercial (acre)	> 60 acres or 800,000 sq. ft.	\$110,550 per acre
High rise commercial (acre)	> 5 stories in height	\$281,400 per acre
Office (acre)	< 5 stories in height	\$90,450 per acre
Industrial RTP (acre)		\$80,400 per acre
18-hole golf course		\$703,500 per acre
Medical center		\$653,250 per acre

The total number of estimated DUs and commercial acres for the Village 2, 3 and a portion of 4 SPA Plan PFFP is presented in Table B.3.

Table C.15 summarize the estimated TDIF based on the project development phasing per the LL&G Traffic Analysis. The table is provided as an estimate only. Fees may change depending upon the actual number dwelling units, the actual acreage for commercial and industrial land and the current city fee, which is subject to change from time to time. Final calculations will be known at time building permits are applied for.

Table C.15 Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Estimated TDIF Fees¹⁴									
Phase	SF DU	Fee/SF DU	MF DU	Fee/MF DU	Com'l Ac.	Com'l Fee/Ac.	Ind. Ac	Ind. Fee/Ac	Fees
Blue	160	\$10,050	0	\$0	0	\$0	0	\$0	\$1,608,000
Red	258	\$10,050	459	\$8,040	0	\$0	0	\$0	\$6,283,260
Yellow	327	\$10,050	185	\$8,040	0	\$0	0	\$0	\$4,773,750
Green	196	\$10,050	193	\$8,040	0	\$0	0	\$0	\$3,521,520
Orange	0	\$0	624	\$8,040	0	\$0	0	\$0	\$5,016,960
Purple	45	\$10,050	339	\$8,040	11.9	\$160,800	0	\$0	\$5,091,330
Teal	0	\$0	0	\$0	0	\$0	87.9	\$73,520	\$6,462,408
White	0	\$0	0	\$0	0	\$0	0	\$0	\$0
Pink	0	\$0	0	\$0	0	\$0	80.9	\$73,520	\$5,947,768
Brown	0	\$0	0	\$0	0	\$0	95.6	\$73,520	\$7,028,512
Total	986		1800		11.9		264.4		\$45,733,508

C. Traffic Signal Fee

Future development within the project will be required to pay Traffic Signal Fees in accordance with Chula Vista Council Policy No. 475-01. The estimated fee is calculated based on the current fee of \$26.65 (the date of this PFFP) per vehicle trip generated per day for various land use categories. The table is provided as an estimate only. Fees may change depending upon the actual number dwelling units, the actual acreage for commercial and industrial land and the current city fee, which is subject to change from time to time. Final calculations will be known at time building permits are applied for.

Table C.16 Otay Ranch Village 2, 3, portion of Village 4 SPA Estimated Traffic Signal Fees¹⁵		
Development Phase	Trips	Traffic Signal Fee @ 26.65/Trip
Blue	1,600	\$42,640
Red	7,135	\$190,148
Yellow	4,767	\$127,041
Green	3,545	\$94,474
Orange	5,048	\$134,529
Purple	11,562	\$308,127
Teal	10,548	\$281,104
White	2,210	\$58,897
Pink	9,708	\$258,718
Brown	11,778	\$313,884
Total	67,901	\$1,809,562

D. Non-DIF Streets and Signals

Internal public streets and signals are not eligible for DIF credit pursuant to city policy. These streets and signals will be funded by the development.

¹⁴ Estimated TDIF is based on the Revised January 26, 2006, City of Chula Vista Development Checklist for Municipal Code Requirements (Form 5509) and is subject to annual adjustments. Actual TDIF may be different.

¹⁵ Estimated Traffic Signal Fee is based on the Revised October 12, 2005, City of Chula Vista Development Checklist for Municipal Code Requirements (Form 5509) and is subject to annual adjustments. Trips are estimated, based on the LLG Traffic Analysis, actual trips and Traffic Signal Fees may be different.

II.5.4.1.14 Threshold Compliance and Requirements

1. Threshold compliance will continue to be monitored through the annual intersection-monitoring program and the Eastern Chula Vista Transportation Phasing Plan updates.
2. The project shall be conditioned to pay TDIF Fees and Traffic Signal Fees at the rate in effect at the time building permits are issued.
3. The project shall be conditioned to complete the Traffic Facilities (street segments and signalized intersections) according to the thresholds as described in Table C.13.
4. Within the Industrial park, access northward on Heritage Road to Olympic Parkway is needed once **31.7** acres of industrial land uses are developed. It may be necessary to provide northward access to Olympic Parkway with any industrial development if it is determined that access only to the south to Main Street is not sufficient from a safety standpoint.
5. No units within the project area shall be constructed which would result in the total number of units within the Eastern Territories exceeding 8,999 units, prior to the construction of SR-125 between SR-54 and the International Border. Notwithstanding the foregoing, the City may issue additional building permits if the City Council, in its sole discretion, determines that each of the following conditions have been met: (1) SR-125 is constructed and open between SR-54 and Olympic Parkway; and (2) traffic studies, prepared to the satisfaction of the City Engineer and the City Council, demonstrate that the opening of SR-125 to Olympic Parkway provides additional capacity to mitigate the project's cumulative significant traffic impacts to a level below significance without exceeding GMOC traffic threshold standards. Alternatively, the City may issue building permits if the City Council, in its sole discretion, has approved an alternative method to implement the City's Growth Management Ordinance, as may be amended from time to time.
6. Heritage Road shall be connected between Olympic Parkway and Main Street once 1,276 EDUs are built. The applicant may construct a 'Temporary Intersection' at Main Street and Heritage Road according to the following requirements:
 - a. The intersection geometry shall be approved by the Chula Vista City Engineer.
 - b. The design of the south leg of the intersection shall be reviewed with representatives of the Coors Amphitheater to ensure the design adequately accommodates the high volume event traffic.
 - c. The intersection construction shall be coordinated with the Coors Amphitheater event season and the construction phasing will need to be completed to the satisfaction of the City Engineer.
 - d. The project proponent shall submit to the City, Civil Engineering drawings of the intersection and concept plan of construction phasing.

Table C.17 PFFP IMPACTS AND MITIGATION MEASURES	
PFFP IMPACTED LOCATIONS	MITIGATION MEASURES
Heritage Road	
Olympic Pkwy. to Santa Victoria (Street "D")	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
Santa Victoria (Street "D") to Santa Lisa (Street "F")	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
Santa Lisa (Street "F") to Street "J" North	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
Street "J" North to Street "J" South	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
Street "J" South to Main Street	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
Main Street	
Project West boundary to Heritage Road	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
East of Heritage Road	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
Santa Victoria (Street "D")	
Heritage Road to connect with existing improvements	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
Street "E"	
Street "D" to Street "B"	Prior to approval of the Final Map containing the EDU's Threshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.

Table C.17 Continued PFFP IMPACTS AND MITIGATION MEASURES	
PFFP IMPACTED LOCATIONS	MITIGATION MEASURES
Street "E"	
Street "B" to La Media Rd.	Prior to approval of the Final Map containing the EDU's Thrueshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
La Media Road	
Santa Venetia to Birch Avenue	Prior to approval of the Final Map containing the EDU's Thrueshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.
South of Birch Road	Prior to approval of the Final Map containing the EDU's Thrueshold triggering the construction of street improvements, the applicant(s) shall enter into an agreement to design, construct, and secure full street improvements. Phasing of improvements shall be consistent with the PFFP and to the satisfaction of the City Engineer.

Source: LL&G

II.5.4.2 POLICE

II.5.4.2.1 Threshold Standard

- A. Emergency Response: properly equipped and staffed police units shall respond to 81% of “Priority One” Emergency calls throughout the city within 7 minutes and shall maintain an average response time to all “Priority One” emergency calls of 5.5 minutes or less (measured annually).
- B. Urgent Response: Properly equipped and staffed police units shall respond to 57% of “Priority Two” Urgent calls throughout the city within 7 minutes and maintain an average response time to all “Priority Two” calls of 7.5 minutes or less (measured annually).

II.5.4.2.2 Service Analysis

The City of Chula Vista Police Department provides police services. The purpose of the Threshold Standard is to maintain or improve the current level of police services throughout the City by ensuring that adequate levels of staff, equipment and training are provided. Police threshold performance was analyzed in the “Report on Police Threshold Performance 1990-1999”, completed April 13, 2000. In response to Police Department and GMOC concerns the City Council amended the threshold standards for Police Emergency Response on May 28, 2002, with adoption of Ordinance 2860. Police Facilities are also addressed in *A Master Plan for the Chula Vista Civic Center Solving City Space Needs Through Year 2010*, dated May 8, 1989.

II.5.4.2.3 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for Police Services.

- A. Services reviewed must be consistent with the proposed phasing of the project.
- B. Able to demonstrate conformance with *A Master Plan for the Chula Vista Civic Center* dated May 8, 1989, as amended.

II.5.4.2.4 Existing Conditions

The Chula Vista Police Department (CVPD) provides law enforcement services to the area encompassing the project. The CVPD is located in a new headquarters building at the corner 4th Avenue and F Street in Chula Vista. This new facility is expected to be adequate through the build-out of eastern Chula Vista. Currently, CVPD maintains a staff of approximately 223 sworn officers and approximately 112 civilian and support personnel. The Department has been authorized 228 sworn officers and 112 civilian staff. The Department is recruiting new officers and has approximately 15 officers in training. The Project is within Police Patrol Beat 24 that is served by at least one patrol car 24 hours per day.

Police Facility Inventory

- New Police Headquarters at 4th Avenue and F Street.

II.5.4.2.5 Adequacy Analysis

According to the GMOC 2005 Annual Report the response times for “Priority One” Calls for Service (CFS) were met during the July 2003-June 2004 time period (see Table D.1). “Priority Two” CFS during the same period were not met. The last time the threshold was reached was in FY1996/97. The GMOC considered this “Priority One” performance to be in compliance. Fifty point two percent (48.4%) of “Priority Two” urgent calls were responded to within 7 minutes compared to the 57% threshold. The average “Priority Two” call response time was 9:50 minutes compared to the 7:30 minute threshold time. The GMOC has determined that the Urgent Emergency Response time threshold has not been met.

According to the GMOC, police response time is just one measure of how these services are keeping pace with growth. The city has implemented measures to improve police response time. These measures range from maintaining full staffing to technological improvements. Two measures that do relate to the ability of the Police Department to maintain the quality of life and are growth related are maintaining adequate staffing and reducing false alarms.

While achieving the response time threshold, the GMOC indicated that they are confident that the Police Department will remain diligent in meeting and achieving shorter response times than what is indicated as the Threshold Standard. In achieving shorter response times, the Police Department has made a set of recommendations for which GMOC support has been requested. The recommendations are reasonable and the GMOC lends their support aware that budgetary constraints and priority setting will result in a case-by-case evaluation.

As the table below indicates, the Police Department has made progress in reducing their response time over the past several years. The Police Department is engaged in several current or proposed initiatives to continue the reduction in response times.

Table D.1 Historic Response Times Priority I -- Emergency Response, Calls For Service			
	Call Volume	% of Call Response w/in 7 Minutes	Average Response Time
Threshold		81.0%	5:30
FY2003-04	1,322 of 71,000	82.1%	4:52
FY 2002-03	1,424 of 71,268	80.8%	4:55
FY 2001-02	1,539 of 71,859	80.0%	5:07
FY 2000-01	1,734 of 73,977	79.7%	5:13
FY 1999-00	1,750 of 76,738	75.9%	5:21
CY 1999 ¹⁶	11,890 of 74,405	70.9%	5:50

Source: FY 2005 GMOC Annual Report

¹⁶ The FY98-99 GMOC Report used calendar 1999 data due to the implementation of the new CAD system in mid-1998.

The GMOC supports the following Police Department initiatives subject to necessary overriding budgetary considerations:

- The dispatch staffing model and the Dispatch Manager Concept.
- Continued use of the patrol staffing model and the advance hiring program.
- Planned upgrades of police technologies, such as MDCs, wireless data transmission to patrol vehicles, and global positioning systems
- Research and evaluation of:
 - a. Internet crime reporting;
 - b. Alternative deployment tactics, such as revised beat configurations and bike patrol; and
 - c. An aerial platform.

II.5.4.2.6 Financing Police Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is \$5,489/unit, multi-family residential is \$5,109/unit, commercial (including office) development is \$21,727/acre and industrial development is \$4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report. At the current fee rate, the project Police Fee obligation at buildout is \$3,361,016.

Table D.2 Village 2, 3, Portion of Village 4 SPA Public Facilities Fees For Police¹⁷									
Development Phase	Dwelling Units		Com'l Acres	Industrial Acres	Police Fee				
	SF	MF			Single Family \$809/DU	Multi-Family \$1,198/DU	Com'l \$10,423/Ac.	Ind. \$1,070/Ac	Total Fee
Blue	160	0	0.0	0.0	\$129,440	\$0	\$0	\$0	\$129,440
Red	258	459	0.0	0.0	\$208,722	\$549,882	\$0	\$0	\$758,604
Yellow	327	185	0.0	0.0	\$264,543	\$221,630	\$0	\$0	\$486,173
Green	196	193	0.0	0.0	\$158,564	\$231,214	\$0	\$0	\$389,778
Orange	0	624	0.0	0.0	\$0	\$747,552	\$0	\$0	\$747,552
Purple	45	339	11.9	0.0	\$36,405	\$406,122	\$124,034	\$0	\$566,561
Teal	0	0	0.0	87.9	\$0	\$0	\$0	\$94,053	\$94,053
White	0	0	0.0	0.0	\$0	\$0	\$0	\$0	\$0
Pink	0	0	0.0	80.9	\$0	\$0	\$0	\$86,563	\$86,563
Brown	0	0	0.0	95.6	\$0	\$0	\$0	\$102,292	\$102,292
Subtotal	986	1800	11.9	264.4	\$797,674	\$2,156,400	\$124,034	\$282,908	\$3,361,016
Total	2786		11.9	264.4	\$797,674	\$2,156,400	\$124,034	\$282,908	\$3,361,016

¹⁷ The PDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

II.5.3.2.7. THRESHOLD COMPLIANCE AND REQUIREMENTS

- A. The City will continue to monitor police responses to calls for service in both the Emergency (priority one) and Urgent (priority two) categories and report the results to the GMOC on an annual basis.
- B. That the Police Department remain diligent in meeting and achieving shorter response times than what is indicated as the Threshold Standard through the active pursuit and implementation of their current and planned programs and report on how these measures improved response times to next years GMOC.
- C. Compliance will be satisfied with the payment of Public Facilities Fees. The proposed project will be required to pay public facilities fees for police services based on the number of dwelling units, the amount of commercial acres and the amount of industrial acres at the rate in effect the time building permits are issued.

II.5.4.3 FIRE AND EMERGENCY MEDICAL SERVICES

II.5.4.3.1 Threshold Standard

Emergency response: Properly equipped and staffed fire and medical units shall respond to calls throughout the City within seven (7) minutes in 80 percent (current service to be verified) of the cases (measured annually).

II.5.4.3.2 Service Analysis

The City of Chula Vista Fire Department provides Fire and Emergency Medical Services (EMS). EMS is provided on a contract basis with American Medical Response (AMR). The City also has county-wide mutual and automatic aid agreements with surrounding agencies, should the need arise for their assistance. The purpose of the Threshold Standard and the monitoring of response times are to maintain and improve the current level of fire protection EMS in the City. Fire/EMS facilities are provided for in the 1997 Fire Station Master Plan, as amended. The Fire Station Master Plan indicates that the number and location of fire stations primarily determine response time. The Fire Station Master Plan evaluates the planning area's fire coverage needs, and recommends a nine (9) station network at build out to maintain compliance with the threshold standard.

II.5.4.3.3 Project Processing Requirements

Developments shall be in accordance with the project guidelines outlined in the Fire Station Master Plan as may be amended from time to time.

In accordance with the Fire Station Master Plan, the City, at its sole discretion, shall determine when a new fire station is required in order to achieve threshold service levels, meet specific project guidelines or maintain general operational needs of the Fire Department.

The requirement to pay for fire station construction and related equipment shall be the sole responsibility of the developer or developers and the City may require said developer or developers to provide a guarantee mechanism to assure the availability of such funding.

The SPA Plan and the PFFP are required by the Growth Management Program to address the following issues for fire services:

- A. Specific siting of the facility takes place, which conforms with the *Fire Station Master Plan*, August 14, 1997, as amended.
- B. Equipment needs identified.
- C. Methods of financing discussed.
- D. Timing of construction is consistent with threshold service levels, specific project guidelines and/or general operational needs of the Fire Department.
- E. Demonstrate the ability to provide adequate facilities to access required fire stations in conjunction with the construction of sewer and water facilities.

II.5.4.3.4 Existing Conditions

There are currently seven (7) city stations and one (1) fire protection district station serving the City of Chula Vista. The existing and future stations are listed below:

Table E.1 Fire Station Inventory		
Chula Vista Existing Facilities	Location	
Station #1	447 "F" Street	
Station #2	80 East "J" Street	
Station #3	1410 Brandywine	
Station #4 + Fire Training Tower	850 Paseo Ranchero	
Station #5 (Montgomery)	391 Oxford Street	
Station #6	Rolling Hills	
Station #7	Santa Venetia adjacent Village 2	
Interim Station #8	975 Lane Avenue	
Station #9	EUC	
Fire Prevention Bureau & Fire Administration	447 "F" Street	
County Fire Protection District Facility ¹⁸		
Bonita/Sunnyside Fire Protection Dist.	4900 Bonita Road	
Planned Chula Vista Facilities		Cost Estimate ¹⁹
Station #5 (to be reconstructed)	391 Oxford Street	\$1,200,000 +
Station #8	EastLake Trails/Woods	Unknown
Station #9	Otay Ranch Village 15	None Established
Other Capital Improvements		
Public Safety Communications (CAD/RMS)	Dispatch Center	\$5,000,000 ±
Public Safety Communications (800MHz)	Citywide	None Established
Brush Engine	Eastern Territories	\$225,000 ±

II.5.4.3.5 Adequacy Analysis

The City of Chula Vista Fire Department (CVFD) currently serves areas within the City's boundaries, including the project. The closest CVFD stations to the project site are:

- Fire Station #7, located adjacent to Village 2.
- Fire Station #3, located in the Sunbow development.
- Fire Station #6, located in Rolling Hills Ranch.
- Planned Fire Station #8, to be located in EastLake I.

The station nearest to the project is Fire Station #7 and will provide first-in coverage to the project.

According to the GMOC 2005 Annual Report, times for Emergency Response were not met during the July 2003 to June 2004, period. The Fire Department responded to 72.9% of emergency calls within 7-minutes, compared with the 80% threshold level that had been based on an estimated 1.3-minute dispatch and turnout and 5.7-minute travel time (see Table

¹⁸ The City of Chula Vista has an Automatic Aid Agreement with Bonita/Sunnyside and the cities of National City, Imperial Beach, Coronado and San Diego.

¹⁹ Cost Estimates are approximate figures and subject to refinement by the City of Chula Vista.

D.2). This falls short of the compliance standard. An analysis of the various response time components revealed that the average turnout time declined from 1 minute 50 seconds to 2-minutes and 7-seconds. This accounted for a 17-second (15%) decline from 2003. The decline in performance that resulted from the change in the average turnout time was offset by the change in average travel time that improved from 3-minutes and 43-seconds to 3-minutes 32-seconds. This marked an 11 second (4.9%) change from 2003. The average dispatch time improved from 36 to 28 seconds accounting for an 8 second (22.2%) performance enhancement.

American Medical Response (AMR) provides emergency medical services to the project site, on a contract basis for the City of Chula Vista. There are two AMR stations, which provide paramedic with EMT services to the City of Chula Vista exclusively.

Table D.2 EastLake Seniors Supplemental PFFP Fire/EMS - Emergency Response Times Since 1994		
Years	Call Volume	% of All Call Response Within 7:00 Minutes
FY 2003-04	8,420	72.9%
FY 2002-03	8,088	75.5%
FY 2001-02	7,626	69.7%
FY 2000-01	7,128	80.8%
FY 1999-00	6,654	79.7%
CY 1999	6,344	77.2%
CY 1998	4,119	81.9%
CY 1997	6,275	82.4%
CY 1996	6,103	79.4%
CY 1995	5,885	80.0%
CY 1994	5,701	81.7%

II.5.4.3.6 Financing Fire Service Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is \$5,489/unit, multi-family residential is \$5,109/unit, commercial (including office) development is \$21,727/acre and industrial development is \$4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report.

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Fire Fee obligation at buildout is \$1,591,177.

Table E.3 Village 2, 3, Portion of Village 4 SPA Public Facilities Fees For Fire²⁰									
Development Phase	Dwelling Units		Com'l Acres	Industrial Acres	Fire Fee				
	SF	MF			Single Family \$505/DU	Multi-Family \$503/DU	Com'l \$2,521/Ac.	Ind. \$597/Ac	Total Fee
Blue	160	0	0.0	0.0	\$80,800	\$0	\$0	\$0	\$80,800
Red	258	459	0.0	0.0	\$130,290	\$230,877	\$0	\$0	\$361,167
Yellow	327	185	0.0	0.0	\$165,135	\$93,055	\$0	\$0	\$258,190
Green	196	193	0.0	0.0	\$98,980	\$97,079	\$0	\$0	\$196,059
Orange	0	624	0.0	0.0	\$0	\$313,872	\$0	\$0	\$313,872
Purple	45	339	11.9	0.0	\$22,725	\$170,517	\$30,000	\$0	\$223,242
Teal	0	0	0.0	87.9	\$0	\$0	\$0	\$52,476	\$52,476
White	0	0	0.0	0.0	\$0	\$0	\$0	\$0	\$0
Pink	0	0	0.0	80.9	\$0	\$0	\$0	\$48,297	\$48,297
Brown	0	0	0.0	95.6	\$0	\$0	\$0	\$57,073	\$57,073
Subtotal	986	1800	11.9	264.4	\$497,930	\$905,400	\$30,000	\$157,847	\$1,591,177
Total	2786		11.9	264.4	\$497,930	\$905,400	\$30,000	\$157,847	\$1,591,177

Table E.3 is an estimate. Actual fees may be different. PFDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

II.5.4.3.7 Threshold Compliance and Recommendations

- A. The City will continue to monitor fire department responses to emergency fire and medical calls and report the results to the GMOC on an annual basis.
- B. The project shall pay public facilities fees at the rate in effect at the time building permits are issued.

²⁰ The PFDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

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II.5.4.4 SCHOOLS

II.5.4.4.1 Threshold Standard

The City annually provides the two local school districts with a 12 to 18 month development forecast and requests an evaluation of their ability to accommodate the forecast and continuing growth. The Districts' replies should address the following:

1. Amount of current capacity now used or committed.
2. Ability to absorb forecasted growth in affected facilities.
3. Evaluation of funding and site availability for projected new facilities.
4. Other relevant information the District(s) desire(s) to communicate to the City and GMOC.

II.5.4.4.2 Service Analysis

School facilities and services in Chula Vista are provided by two school districts. The Chula Vista Elementary School District (CVESD) administers education for kindergarten through sixth grades. The Sweetwater Union High School District (SUHSD) administers education for the Junior/Middle and Senior High Schools of a large district, which includes the City of Chula Vista. The purpose of the threshold standard is to ensure that the districts have the necessary school sites and funds to meet the needs of students in newly developing areas in a timely manner, and to prevent the negative impacts of overcrowding on the existing schools. Through the provision of development forecasts, school district personnel can plan and implement school facility construction and program allocation in line with development.

On November 3, 1998, California voters approved Proposition 1A, the Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998. Prior to the passage of Proposition 1A, school districts relied on statutory school fees established by Assembly Bill 2926 ("School Fee Legislation") which was adopted in 1986, as well as judicial authority (i.e., Mira-Hart-Murrieta court decisions) to mitigate the impacts of new residential development. In a post Proposition 1A environment, the statutory fees provided for in the School Fee Legislation remains in effect and any mitigation requirements or conditions of approval not memorialized in a mitigation agreement, after January 1, 2000, will be replaced by Alternative Fees (sometimes referred to as Level II and Level III Fees). The statutory fee for residential development is referred to in these circumstances as the Level I Fee (i.e., currently at \$2.24 per square foot for new residential construction and \$0.36 per square foot for new commercial and industrial construction).

CVESD utilizes their current School Facilities Needs Analysis (SFNA), February 2005, to quantify, for the next five-year period, the impacts of new residential development on the districts school facilities, and to calculate the permissible Alternative Fees to be collected from such new residential development. To ensure the timely construction of school facilities to house students from residential development in Village 2, alternative fees or implementation of a Mello Roos Community Facilities District (CFD) will be necessary.

In compliance with Government Code Section 65995 et. Seq. the SFNA provides the determination of eligibility for and the calculation of a Level II Fee of \$1.89 per square foot of new residential construction. A corresponding Level III Fee of \$3.79 per square foot of new residential construction is also identified.

SUHSD utilizes their current “Sweetwater Union High School District Long Range Comprehensive Master Plan” dated July 20, 2004.

II.5.4.4.3 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for School Services:

1. Identify student generation by phase of development.
2. Specific siting of proposed school facilities will take place in conformance with the *Sweetwater Union High School District Long Range Comprehensive Plan*, November 1989 and Chula Vista Elementary School District's Standards and Criteria.
3. Reserve school sites, if necessary, or coordinate with the district for additional school classrooms.
4. Provide cost estimates for facilities.
5. Identify facilities consistent with proposed phasing.
6. Demonstrate the ability to provide adequate facilities to access public schools in conjunction with the construction of water and sewer facilities.
7. Secure financing.

II.5.4.4.4 Existing Conditions

School Facilities Inventory, Chula Vista Elementary School District

Currently, the CVESD's inventory consists of 42 elementary schools including 6 Charter schools. Twenty four schools are on a traditional calendar and 18 are on year-round calendar. Table F.1 lists existing schools together with the capacity and enrollment of each. Capacity using existing facilities is approximately 26,270. Enrollment is currently approximately 26,281. Twenty-One of the 40 schools are over capacity. Five of the 42 schools are near capacity (see Table F.1).

New elementary schools will be needed to meet the educational needs of students generated from the projected development and resultant population increase. The district has experienced rapid growth during the past decade. During the period from 1995 to 2004 District enrollment went up by over 6900 students, an increase of 36%. This growth was reportedly due to:

1. Demographic changes in older neighborhoods;
2. New growth in the eastern territories; and
3. Higher student generation ratios (students per household) in some new developments in the east.

**Table F.1
Chula Vista Elementary School District
Enrollments vs. Capacity**

School	Enrollment 3/11/05	Approximate Capacity	Remaining Capacity
Allen	410	452	42
Arroyo Vista Charter	806	750	-56
Casillas	686	638	-48
Castle Park	530	551	21
Chula Vista Hills	571	588	17
Chula Vista LCC	556	601	45
Clear View Charter	527	513	-14
Cook	531	500	-31
Discovery Charter	775	768	-7
EastLake	624	613	-11
Feaster/Ed Charter	1130	1013	-117
Finney	533	522	-11
Halecrest	503	513	10
Harborside	713	701	-12
Hedenkamp	918	872	-46
Heritage	885	825	-60
Hilltop Drive	562	513	-49
Juarez-Lincoln	652	751	99
Kellogg	515	501	-14
Lauderbach	853	797	-56
Liberty	523	535	12
Loma Verde	575	588	13
Los Altos	404	438	34
Marshall	715	663	-52
McMillin	858	734	-124
Montgomery	381	463	82
Mueller Charter	907	859	-48
Olympic View	824	775	-49
Otay	626	600	-26
Palomar	423	422	-1
Parkview	473	548	75
Rice	707	728	21
Rogers East/West	578	659	81
Rohr	430	472	42
Rosebank	688	688	0
Salt Creek	465	500	35
Silver Wing	523	525	2
Sunnyside	434	488	54
Tiffany	620	726	106
Valle Lindo	586	651	65
Valley Vista	553	563	10
Vista Square	708	663	-45
Total	26,281	26,270	-11

Source: CVESD.

Table F.2 Sweetwater Union High School District Enrollments vs. Capacity			
School Site	Adjusted Total Capacity	2005 Estimated Enrollment	Capacity vs. Projected
Middle Schools			
Bonita Vista	1,738	1,141	597
Castle Park	1,613	1,430	183
Chula Vista	1,396	1,398	-2
EastLake	1,500	1,107	393
Granger	1,380	1,158	222
Hilltop	1,504	1,272	232
Mar Vista Mid.	1,581	1,302	279
Montgomery Mid.	1,614	1,138	476
National City Mid.	1,054	940	114
Rancho del Rey	1,613	1,334	279
Southwest Jr.	1,350	871	479
Subtotal	16,343	13,091	3252
High Schools			
Bonita Vista	2,487	2,590	-103
Castle Park	2,061	2,420	-359
Chula Vista	2,420	2,867	-447
EastLake	2,424	2,605	-181
Hilltop	2,019	2,376	-357
Mar Vista	1,879	2,236	-357
Montgomery	2,440	2,425	15
Otay Ranch	2,400	2,068	332
San Ysidro	2,400	1,804	596
Southwest	2,408	2,446	-38
Sweetwater	2,163	2,673	-510
Palomar	744	487	257
Subtotal	25,845	26,997	-1,152
Total	42,188	40,088	2,100

Source: SUHSD

School Facilities Inventory, Sweetwater Union High School District

The SUHSD currently administers eleven (11) junior high/middle schools and twelve (12) senior high schools including one continuation high school within the District. Of the eleven junior highs, six have been converted to middle schools serving grades seven and eight. As the population grows, the District is projecting a need for and must secure funding for 3 middle schools and 2 high schools throughout the District's boundaries.

Within the district, the primary need over the next several years is at the high school level. In 2002, the district completed construction of the Otay Mesa High School. In 2003 the district opened the Otay Ranch High School, which is adjacent to the Village 2 Planning Area.

Planned for the future are two middle schools, and potentially two more high schools to be located in the Otay Ranch.

Table F.3 Sweetwater Union High School District 2005-2009 Planned Schools		
Future Schools	Capacity	Est. Opening Date
Middle School/Otay Ranch Village 7	1,500	Unknown
High School/Otay Ranch Village 7	2,400	2005/6

II.5.4.4.5 School Sizing and Location

The project is proposed to consist of 2,786 dwelling units at build out. At completion, the proposed project could generate approximately 1,500 students using the following Student Generation Factors:

		<u>Single Family Detached</u>	<u>Multi-Family Attached</u> ²¹
Elementary (K-6)	=	.3485 ²² students/dwelling unit	.3164 students/d.u.
Middle School (7-8)	=	.11 students/dwelling unit	.063 students/d.u.
High School (9-12)	=	.21 students/dwelling unit	.095 students/d.u.

By phase and school category, the project is expected to generate the following students:

Table F.4 Otay Ranch Villages 2, 3 & Portion of Village 4 SPA Student Generation By Development Phase										
Phase	Dwelling Units		Student Generation							
			Elementary (K-6)		Middle (7-8)		High School (9-12)		Total Students	
	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF
Blue	160	0	56	0	18	0	34	0	107	0
Red	258	459	90	145	28	29	54	44	172	218
Yellow	327	185	114	59	36	12	69	18	219	88
Green	196	193	68	61	22	12	41	18	131	92
Orange	0	624	0	197	0	39	0	59	0	296
Purple	45	339	16	107	5	21	1	2	22	131
Teal	0	0	0	0	0	0	0	0	0	0
White	0	0	0	0	0	0	0	0	0	0
Pink	0	0	0	0	0	0	0	0	0	0
Brown	0	0	0	0	0	0	0	0	0	0
Subtotal	986	1800	344	570	109	113	199	141	651	824
Total	2786		914		222		339		1474	

²¹ Includes Single Family Attached and Apartment units.

²² Rate from CVESD SFNA report, February 2005.

School Size Standards:	Elementary	750-1000 students
	Middle	1,500 students
	Senior High	2,400 students

Chula Vista Elementary School District

The State Department of Education must approve the Village 2 elementary school site prior to district acceptance. Due to the tremendous growth and enrollment in the CVESD, it is the district's intent to retain the 10-acre site as identified in the SPA Plan. However, should the site be determined at a later date to be excess property for the purposes of a new school, the district will notify appropriate parties at that time.

The Site Utilization Plan identifies a 10.3-acre elementary school site within the Village 2 core. As noted in Table F.4, the build-out of Village 2 would generate the need to house approximately 914 elementary school age students. Generally, CVESD prefers to construct elementary schools that serve approximately 750 students.

Sweetwater Union High School District

It is anticipated that the 222 middle school students generated by Village 2 will be served at facilities in Rancho del Rey until the first Otay Ranch middle school is constructed. Rancho del Rey Middle School is located approximately two miles north of Village 2 along Paseo Ranchero. The Otay Ranch GDP School Facility Implementation Plan is based on the premise that schools will be constructed when half of the school's projected students reside in the community. The maximum middle school capacity is 1,500 students, which would indicate a school construction trigger of approximately 750 students. However, throughout the district there is abundant middle school capacity. Additional middle schools will be constructed when overall demand begins to approach existing capacity. Currently, Otay Ranch Village 7 has a designated site for a Middle School.

The maximum capacity of a high school is approximately 2,400 students. It is anticipated that the 374 students generated from Village 2 will be served at Otay Ranch high school adjacent to Village 2. Depending on actual build-out and the capacity of existing area schools, it may be necessary to construct another high school within Otay Ranch prior to build-out of Village 2.

Demand for adult school facilities will be satisfied within existing facilities in the Sweetwater Union High School District, until a new facility can be constructed in the Eastern Urban Center (EUC) or a site reserved pursuant to the Otay Ranch GDP.

II.5.4.4.6 Financing School Facilities

California Government Code section 65995 et. seq. and Education Code Section 17620 et. seq. authorizes school districts to impose facility mitigation exactions on new development as a way to address increasing enrollment caused by that development.

Although the collection of school fees is one method available to defray the cost of new development, it is not an acceptable solution since the maximum amount that could be collected by law represents less than one-fourth the cost to construct schools. The SUHSD is unable to meet the needs of this project with current school facilities and it is unable to

construct new facilities to meet the impacts of this project through the provision of school fees.

In recognition of this funding deficiency, it is the policy of each district to fully mitigate the facility impacts caused by a master planned community via the creation of a Mello Roos Community Facilities District as a condition of approval of the SPA Plan (CVESD) or prior to recordation of a final map (SUHSD). The following Mello-Roos Districts have been created by each district:

SUHSD

CFD No.	1	EastLake
CFD No.	2	Bonita Long Canyon
CFD No.	3	Rancho del Rey
CFD No.	4	Sunbow
CFD No.	5	Annexable
CFD No.	6	Otay Ranch
CFD No.	7	Rolling Hills Estate
CFD No.	8	Coral Gate (Otay Mesa)
CFD No.	9	Ocean View Hills
CFD No.	10	Remington Hills/Annexable
CFD No.	11	Lomas Verdes
CFD No.	12	Otay Ranch (Village 1 West)
CFD No.	13	San Miguel Ranch
CFD No.	14	Otay Ranch Village 11
CFD No.	15	Otay Ranch Village 6 (ORC)

CVESD

CFD No.	1	EastLake
CFD No.	2	Bonita Long Canyon
CFD No.	3	Rancho del Rey
CFD No.	4	Sunbow
CFD No.	5	Annexable
CFD No.	6	Otay Ranch
CFD No.	10	Annexable for future annexations
CFD No.	11	Otay Ranch (Lomas Verde)
CFD No.	12	Otay Ranch (Village 1, West)
CFD No.	13	San Miguel Ranch
CFD No.	14	Otay Ranch Village 11 (Brookfield/Shea)
CFD No.	15	Otay Ranch Village 6 (ORC)

Based on historical data available from each district an estimate of costs for the construction of school facilities on a per student basis is provided. Both districts follow state standards for determining the costs and size for school construction. The cost for a high school, including land acquisition, is approximately \$21,666 per student (2000 dollars). Excluding land, the cost for a high school is approximately \$17,500 per student. The cost for a middle school, including land acquisition, is approximately \$16,666 per student (2000 dollars). Excluding land, the cost for a middle school is \$13,333 per student. The cost for an elementary school, including land acquisition, is approximately \$23,444 per student (2003 dollars). Excluding the land, the cost for an elementary school is approximately \$19,364 per student. Land acquisition cost is calculated at approximately \$384,541/net usable acre (10 acre elementary school site). Using the aforementioned costs per student together with the school size, the following costs per facility can be anticipated.

Elementary School Cost

(1000 students) (\$19,364/student w/o land cost)	\$19,364,000
(1000 students) (\$23,444/student w/land cost)	\$23,444,000

Middle School Cost

(1,500 students) (\$13,333/student w/o land cost)	\$20,000,000
(1,500 students) (\$16,666/student w/ land cost)	\$25,000,000

High School Cost

(2,400 students) (\$17,500/student w/o land cost)	\$42,000,000
(2,400 students) (\$21,666/student w/ land cost)	\$52,000,000

II.5.4.4.7 Threshold Compliance and Recommendations

1. As future development applications are processed in the Eastern Territories, the City shall coordinate with each school district to ensure that development does not occur until acceptable school site(s) are identified and a financing mechanism satisfactory to each district is in place.
2. Prior to Final Map approval, the project proponent(s) shall provide documentation to the City confirming satisfaction of SUHSD and CVESD facility funding requirements to offset student generation impacts. Funding shall be satisfied through the Mello-Roos Community Facilities District financing method or other means acceptable to each District. In addition, condition the first tentative map to require that no final map shall be approved unless and until a school facility financing mechanism is in place to the satisfaction of the Sweetwater Union High School District and the Chula Vista Elementary School District.

II.5.4.5 LIBRARIES

II.5.4.5.1 Threshold Standard

In the area east of I-805, the city shall construct, by buildout (approximately year 2030) 60,000 Gross Square Feet (GSF) of library space beyond the citywide June 30, 2000 GSF total. The construction of said facilities shall be phased such that the city will not fall below the citywide ratio of 500 GSF per 1,000 population. Library facilities are to be adequately equipped and staffed.

II.5.4.5.2 Service Analysis

The City of Chula Vista Library Department provides library facilities.

II.5.4.5.3 Project Processing Requirements

The PFFP is required by the Growth Management Program to address the following issues for Library services:

1. Identify phased demands in conjunction with the construction of streets, water and sewer facilities.
2. Specifically identify facility sites in conformance with the Chula Vista Library Master Plan.

II.5.4.5.4 Existing Conditions

The City provides library services through the Chula Vista Public Library at Fourth and “F” Street (Civic Center), the South Chula Vista Library in the Montgomery/Otay planning area, and the library at the EastLake High School. The Castle Park and Woodlawn Libraries have been closed. The existing and future libraries are listed on the Table G and Table G.1, respectively.

Table G.1 EXISTING LIBRARY FACILITIES	
Existing Libraries	Square Footage
Civic Center	55,000
South Chula Vista	37,000
EastLake	10,000
Total Existing Square Feet	102,000

II.5.4.5.5 Adequacy Analysis

Using the threshold standard of 500 square feet of library space per 1,000 population, the demand for library space based on Chula Vista’s estimated population for year end 2004 of a population of 217,000²³ is 108,500 square feet. Chula Vista currently provides 102,000 square feet of library space. This represents a 6,500 square foot deficit. The demand generated by the 12,744 forecasted dwelling units (2005 through 2009) is 19,345 square feet (12,744 x 3.036²⁴/1,000) x 500). By 2009 the demand for library space generated by the

²³ GMOC 2003-2004 Annual Report

²⁴ Population coefficient of 3.036 persons per household.

existing and forecasted dwelling units totals 127,845 (108,500 + 19,345) square feet. Comparing this demand to the existing library square footage of 102,000 square feet results in a deficit of 25,845 square feet unless the first Regional Library is completed before 2009. The SANDAG buildout population for Chula Vista is approximately 282,664. This population will require approximately 152,000 square feet of Library Facilities.

The Chula Vista Public Library Master Plan addresses such topics as library siting and phasing, the impacts of new technologies on library usage, and floor space needs. The plan calls for the construction of a full service regional library of approximately 30,000 square feet east of I-805 by the year 2005 and the construction of a second full service library of similar size in the Otay Ranch Eastern Urban Center (EUC). The plan also recommends that this first branch be built in the Rancho del Rey Community at East H Street and Paseo Ranchero. During the past year the Library staff, in conjunction with the architectural firm of Carrier Johnson, has completed the conceptual plans for an approximate 30,000 square foot branch library to be constructed at the aforementioned Rancho del Rey location. Further, the City Council approved an application for Library Bond Act grant funds to help construct the facility.

Even if the City does not receive grant funds, the Rancho del Rey Branch Library will be built. Fees have been collected for this project, which is 100% PFDIF eligible.

However, with construction of the Rancho del Rey facility, the 10,000 square foot EastLake Library is recommended to be closed. With this closure, there is a projected net gain in library space of 500 square feet by the year 2009. Ultimately, with full buildout, the construction of a new regional library in the Otay Ranch EUC will keep pace with need.

Future library facilities are listed in the following table:

Table G.2 FUTURE LIBRARY FACILITIES		
Future Libraries	Square Footage	Estimated Cost
1st regional library (Rancho Del Rey) @ 36,400 sf	26,400*	\$24,000,000
2nd regional library (Otay Ranch EUC) @ 36,758 sf	23,600**	\$18,000,000
Total Future Net Square Feet	50,000	
Total Master Plan Library Square Feet (existing and future)	152,000	

* Assumes construction of the first 36,400-square foot regional library by year 2006 and the closure of the 10,000-square foot EastLake library, per the Chula Vista Public Library Master Plan.

** Assumes construction of the second 23,600-square foot (minimum size) regional library.

Table G.2 highlights existing plus forecasted project demands for library space as compared to the existing and scheduled library space as well as the impact of the Otay Ranch Village 2 SPA on library facilities.

The project will generate a total library demand of approximately 4,229 square feet, which can be accommodated in the projected planned total square feet of Library space (see Table G.3).

Table G.3 Otay Ranch Villages 2, 3 & Portion of Village 4 SPA Library Space Demand vs. Supply				
	Population²⁵	Demand Square Footage	Supply Square Footage	Above/(Below) Standard
Estimated Existing Citywide 12/31/04	217,000	108,500	102,000	(6,500)
1 st regional library (Rancho del Rey) 2007			26,400	19,900
Forecasted Projects to 2009 (12,744 x 3.036)	38,690	19,345		
Subtotal	255,690	127,845	128,400	555

11.5.4.5.6 Financing Library Facilities

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is \$5,489/unit, multi-family residential is \$5,109/unit, commercial (including office) development is \$21,727/acre and industrial development is \$4,044/acre. This amount is subject to change with the adoption of Ordinance 3010. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report. At the current library fee rate, the Otay Ranch Villages 2, 3 & Portion of Village 4 SPA Library Fee obligation at build-out is \$2,285,770 (see Table G.4).

Table G.4 Otay Ranch Villages 2, 3 & Portion of Village 4 SPA Public Facilities Fees For Libraries ²⁶									
Development Phase	Dwelling Units		Com'l Acres	Industrial Acres	Library Fee				
	SF	MF			Single Family \$845/DU	Multi-Family \$807/DU	Com'l \$0/Ac.	Ind. \$0/Ac	Total Fee
Blue	160	0	0.0	0.0	\$135,200	\$0	\$0	\$0	\$135,200
Red	258	459	0.0	0.0	\$218,010	\$370,413	\$0	\$0	\$588,423
Yellow	327	185	0.0	0.0	\$276,315	\$149,295	\$0	\$0	\$425,610
Green	196	193	0.0	0.0	\$165,620	\$155,751	\$0	\$0	\$321,371
Orange	0	624	0.0	0.0	\$0	\$503,568	\$0	\$0	\$503,568
Purple	45	339	11.9	0.0	\$38,025	\$273,573	\$0	\$0	\$311,598
Teal	0	0	0.0	87.9	\$0	\$0	\$0	\$0	\$0
White	0	0	0.0	0.0	\$0	\$0	\$0	\$0	\$0
Pink	0	0	0.0	80.9	\$0	\$0	\$0	\$0	\$0
Brown	0	0	0.0	95.6	\$0	\$0	\$0	\$0	\$0
Subtotal	986	1800	11.9	264.4	\$833,170	\$1,452,600	\$0	\$0	\$2,285,770
Total	2786		11.9	264.4	\$833,170	\$1,452,600	\$0	\$0	\$2,285,770

²⁵ Based on City of Chula Vista Estimates, 2003-2004 GMOC Annual Report.

²⁶ The PDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

The projected fee illustrated in Table G.4 is an estimate only. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

11.5.4.5.7 Threshold Compliance and Recommendations

Based upon the analysis contained in this section, the city's current library facilities (102,000 square feet) are 6,500 square feet below the threshold standard (see Table G.3). The existing plus proposed new library space totals 128,400 square feet. The total forecasted projects including the Otay Ranch Villages 2, 3 & Portion of Village 4 SPA project totals a demand 128,400 square feet by 2009. This results in an excess (above standard) supply of 555 square feet.

No mitigation is required other than the payment of the Public Facilities DIF for library facilities at the rate in effect at the time building permits are issued.

II.5.4.6 PARKS, TRAILS AND OPEN SPACE

II.5.4.6.1 Park Threshold Standard

Three (3) acres of neighborhood and community parkland with appropriate facilities shall be provided per 1,000 residents. This standard is specified in Section 17.10.040 of the Chula Vista Municipal Code.

II.5.4.6.2 Service Analysis

The City of Chula Vista provides public park and recreational facilities and programs through the General Services, Public Works, and Recreation Departments which are responsible for the acquisition and development of parkland. All park development plans are reviewed by City staff and presented to the Parks and Recreation Commission for review. A recommendation is made by this Commission to the deciding body, the City Council.

The Otay Ranch Parks and Recreation Facility Implementation Plan was adopted by the City Council on October 28, 1993. This plan identifies the parks facility improvement standards for the Otay Ranch.

The City Council approved the Chula Vista Parks and Recreation Master Plan in November 2002. The Plan provides guidance for planning, siting and implementation of neighborhood and community parks.

II.5.4.6.3 Project Processing Requirements

1. Identify phased demands in conformance with the number of dwelling units constructed, street improvements and in coordination with the construction of water and sewer facilities.
2. Specific siting of the facility will take place in conformance with the Chula Vista Parks and Recreation Master Plan.
3. Site/s reserved for park purposes within the project.

II.5.4.6.4 Existing Conditions

The existing and future parks as depicted in the Park and Recreation Element of the General Plan and as updated by the inclusion of more recent information are contained in the city's Parks and Recreation Master Plan.

II.5.4.6.5 Project Park Requirements

Compliance with Public Park Standards

The project generates an estimated population of 8,458 (2,786 dwelling units x 3.036²⁷ population factor). To meet the city threshold requirements the amount of parkland dedicated is based on a standard of 3 acres per 1,000 populations (see Table H.1). The standard is based on State of California Government Code 66477, also known as the Quimby Act, that

²⁷ Provided by the Chula Vista Planning Department.

allows a city to require by ordinance, the dedication of land or payment of fees for park or recreational purposes.

Table H.1 Quimby Act Parkland Requirements		
Villages 2, 3, Portion of Village 4 SPA Population	Standard	Parkland Acres Required
8,458	3 acres per 1,000 population	25.37

All new development in the City of Chula Vista is subject to the requirements contained in the City's Parkland Dedication Ordinance CVMC Chapter 17.10. The ordinance establishes fees for park land acquisition and development, sets standards for dedication and establishes criteria for acceptance of parks and open space by the City of Chula Vista. Fees vary depending upon the type of dwelling unit that is proposed. There are four types of housing; Single Family dwelling units (defined as all types of single family detached housing and condominiums), Multi-Family dwelling units (defined as all types of attached housing including townhouses, attached condominiums, duplexes, triplexes and apartments), Mobile Homes and Hotel/Motel Rooms. Single Family Housing is defined as a free-standing structure with one residential unit. Multi-Family Housing is defined as any free-standing structure that contains two or more residential units. Parkland dedication requirements are shown below on Table H.2.

Table H.2 City of Chula Vista Parkland Dedication Ordinance Standards		
Dwelling Unit Type	Land Dedication per Unit	Dwelling Units per Park Acre
Single-Family	460 sf/du	95 du/ac.
Multi-Family	341 sf/du	128 du/ac.

Table H.3 Otay Ranch Village 2, 3, Portion of Village 4 SPA Plan Preliminary Parkland Dedication Requirements City Ordinance Applied to Planning Prediction of Unit Numbers and Types			
Dwelling Unit Type*	Number of D.U.	Parkland Required/DU	Required Acres
Single Family Detached	982	460 sf/du	10.4
Multiple Family	1,804	341 sf/du	14.1
TOTALS	2,786		24.5
<p>* Dwelling unit type - Note that number and type of units listed reflect 'Land Use Designations' listed in the Otay Ranch General Development Plan, since this level of information is all that is available at the time of this document's preparation irrespective of underlying zoning district. Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. Definitions of dwelling unit types used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC.</p>			

The City's Parklands and Public Facilities Ordinance (CVMC 17.10) is based on the Quimby Act. Based on the City's Parklands and Public Facilities Ordinance, the parkland requirement is approximately 24.50 acres (see Table H.3).

The project phasing (Table B.3) and Site Utilization Plan identifies the park designations and acreage that are also shown in Table H.4. Table H.4 also identifies the phase of development in which the park will be constructed and the park acres that the city has determined will be given credit for purposes of satisfying the project's parkland dedication as measured against the City's Parkland Dedication Ordinance. The Neighborhood Park will be graded and offered for dedication in whatever development phase is initiated by the project developers. The City's Parkland Dedication Ordinance requirements for the project are outlined in Table H.4.

Table H.4 Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Plan Park Acres And Eligible Credits²⁸				
Park Identification	Net Acreage	Phase	Proposed Credit %	Eligible Credit Ac.
P-1 - Town Square	1.4	Red	100%	1.4
P-2 – Neighborhood Park	7.1	Red	100%	7.1
P-3 - Neighborhood Park	6.9	Purple	100%	6.9
P-4 - Community Park	44.2	White ^{29 30}	100%	44.2
Total Acres Eligible for Credit Against PAD				59.6
Villages 2, 3, Portion of Village 4 SPA PAD Requirements				24.50
Subtotal Villages 2, 3, Portion of Village 4 SPA Credits				35.10
Residual Obligation from SPA One, Village 6 and Village 7				32.53
Total Credits				2.57

II.5.4.6.6 Park Adequacy Analysis

Table H.5 is a comparison of park acreage demands and supply east of Interstate 805 for existing, approved projects, as well as the phased addition of the project. A review of the existing and approved park demands for Chula Vista east of I-805 including the project indicates a projected 2009 demand of approximately 386.03 acres of Neighborhood and Community Park. The 2009 projected supply of park acreage east of I-805, 413.52 acres, is 27.49 acres more than the projected demand.

²⁸ Parkland fee and acreage obligations are subject to change pending changes in the dwelling unit types and numbers, or clarification of unit type at the time when obligations are due.

²⁹ Approximately 32.53 acres of the 44.2 acres of Community Park represents residual obligation resulting from the development of the Otay Ranch SPA One, Village 6 and Village 7.

³⁰ Community Park site to be delivered to the city in the first development phase.

Table H.5 Estimated Park Acreage Demand Compared to Supply East of Interstate 805					
	Population East of I-805³¹	Demand Park Acres³²	Existing Park Acres	Eligible Credit Acres	Net Acres +/-Standard
Existing to 12/2004	97,575	292.73	279.95 ³³	279.95	-12.78
Forecasted Projects 2005 to 2009	31,100 ³⁴	93.30	133.57 ³⁵	133.57	+40.27
Total	128,675	386.03	413.52	413.52	+27.49

Table H.6 Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Park Supply by Phase							
Phase	Dwelling Unit Type*		Demand Park Acres	Supply Park Acres	Eligible Credit Acres	Net Acres +/- Standard	Project Cumulative
	SF	MF					
Blue	160	0	1.46	0.00	0.00	-1.46	-1.46
Red	258	459	6.52	8.50	8.50	1.98	0.52
Yellow	327	185	4.65	0.00	0.00	-4.65	-4.13
Green	195	193	3.53	0.00	0.00	-3.53	-7.66
Orange	0	624	5.72	0.00	0.00	-5.72	-13.38
Purple	45	339	3.49	6.90	6.90	3.41	-9.97
Teal	0	0	0.00	0.00	0.00	0.00	-9.97
White	0	0	0.00	44.20	44.20	44.20	34.23
Pink	0	0	0.00	0.00	0.00	0.00	34.23
Brown	0	0	0.00	0.00	0.00	0.00	34.23
Subtotal	986	1800	25.37	59.60	59.60	34.23	34.23
Total	2786		25.37	59.60	59.60	34.23	34.23
[*] Dwelling unit type - Note that number and type of units listed reflect 'Land Use Designations' listed in the Otay Ranch General Development Plan, since this level of information is all that is available at the time of this document's preparation irrespective of underlying zoning district. Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. Definitions of dwelling unit type used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC.							

The proposed development of the project requires per the Quimby Act approximately 25.37 acres (see Table H.1) for public parkland. The project SPA plan identifies 59.60 acres net for public

³¹ Population figures are from the 2005 GMOC Annual Report.

³² Based on City Threshold requirement of 3 acres of neighborhood and community parkland per 1,000 residents east of I-805.

³³ Existing Park Acreage from General Services.

³⁴ Population figure derived from the Table B.1.

³⁵ Park acreage from Park Acreage Table from the 2005 GMOC Annual Report, Appendix B, Workshop Reports.

Neighborhood Park and Community Park land. The two Neighborhood Parks, the 7.1-acre P-2 and the 6.9-acre P-3 site, and the 1.4-acre Town Square (P-1) will be located within the village core of the project and will be phased as determined by the Director of General Services. The 44.2-acre Community Park (P-4) land will be offered for dedication during the first phase of the approved project. The difference in the proposed Neighborhood Park and Community Park requirements and the obligation will be accommodated through credits to the developer. Nearly 32.53 acres of the 44.2-acre community parkland is allocated for meeting the residual parkland obligation related to development of Otay Ranch SPA One, Village 6 and Village 7. Once the SPA One and Village 2 parkland obligation are met approximately 2.57 acres of community parkland would be available for credit to the project developer.

II.5.4.6.7 Open Space, Trails and Recreation

A. Open Space

The Otay Ranch GDP established a 12-acre per 1,000 residents of active or passive recreation as an open space standard. This standard is being met by the on-site dedication of open space acreage within the Management Preserve pursuant to the Otay Ranch Resource Management Plan (RMP). The location and general extent of open space is determined at the GDP level of planning. The project is required to provide approximately 101.5 acres of open space (8,458 predicted population/1,000 x 12 acres = 101.5 acres of open space). The project provides approximately 386.1 acres of on-site open space that includes preserve areas (approximately 74.7 acres) and the use of manufactured slopes together with undisturbed areas (approximately 311.4 acres).

Natural open space can be classified as land that has not been disturbed by development. The bulk of the natural open space within Otay Ranch is included within the RMP. The RMP establishes a Resource Preserve, which includes portions of the Villages 2, 3, Portion of Village 4 SPA planning area. The GDP categorizes "other open space" as a mixture of neighborhood and community parks, bike trails, hiking trails, school playgrounds, utility easements, scenic corridors, pedestrian walkways, landscape buffers, and other public recreation areas. The other open space areas identified for Villages 2, 3, Portion of Village 4 SPA are the two Neighborhood Parks, the Town Square, the Community Park, the Public School Playground, the Community Purpose Facilities and the Village Pathway, Paseos and Trails.

The 386.1 acres of Open Space lands as indicated on the Site Utilization Plan shall be preserved through the dedication of open space easements and/or lots to the City, CFD or other appropriate agency, or to a Master Community Association, which will be determined at the Tentative Map level of approval. Uses will be strictly controlled through zoning regulations (see Chapter 3, PC District Regulations, of the SPA Plan). Landscaping within open space areas shall comply with all requirements of the Chula Vista Landscape Manual.

B. Trails

The SPA Plan area has been designed to accommodate the trails program described by the Otay Ranch Overall Design Plan and the City's Greenbelt Master Plan. The plan has been designed as a pedestrian-oriented village and provides bicycle, cart and pedestrian circulation. All circulation elements within the SPA Plan area have been located and designed to be as accessible as possible, however, the paseos and off-street trails contain steep topography that may limit bicycle and cart travel.

The Trails Plan is illustrated in Exhibit 11. The landscape treatment and design elements of village trails are also illustrated and described in the SPA Design Plan. A summary of the components of the trail plan is provided below.

1. Regional Community Trails

Chula Vista Regional Trails are located on the north side of Olympic Parkway, west side of La Media Road and east side of Heritage Road. These trails are located adjacent to the roadways and may meander within the street right-of-ways and 75-foot landscape buffers. The decomposed granite trails are 12 feet wide to accommodate pedestrians and bicycles.

2. Otay Ranch Village Greenway

The Otay Ranch GDP provides for a Village Greenway to be located through Otay Ranch, specifically through the villages to connect open spaces. The Village Greenway location will be determined in conjunction with the Community Park Design.

3. Village Pathway

Village Pathways are inter-village low speed electric vehicle and pedestrian paths that link all of the Otay Valley Parcel villages and particularly provide access to the regional transit-way stations. In Village 2, a Village Pathway is proposed to extend from the northeast area of the village through the commercial area and west to Heritage Road.

The Otay Ranch Overall Design Plan suggests pedestrian bridges may be used in special circumstances to provide crossings over arterial streets. Proposed locations for pedestrian bridges crossing Olympic Parkway and La Media Road are illustrated on Exhibit 12. These locations would connect Village 2 with Village 1 to the north and Village 2 and with Village 6 to the east.

4. Village Trails

Village Trails provide alternative circulation routes to village streets for pedestrians and bicycles separate from roadways. Trails are located within open space in the SPA Plan area. The landscape treatment and design elements of trails are addressed more fully in the Montecito Design Plan (Chapter Four of the SPA Plan).

5. Village Streets

The village streets are designed to promote pedestrian, bicycle and low speed electric vehicle travel. Low speed electric vehicle and bicycles may travel on village streets of 35 mph or less. Village Pathway streets may provide off-street low speed electric vehicle and bicycle travel. Sidewalks are provided on all village streets.

6. Pedestrian Over-crossings (POCs)

Pedestrian over-crossings enhance inter-village connectivity and promote the walkability of the Otay Ranch. The two POCs connected to Village Two complete a continuous Village Pathway and Regional Trail network that loops through and connects Villages One, Five, Six and Two avoiding at-grade pedestrian crossings of arterial streets.

C. Village Park and Recreation Program

The project SPA provides the park, recreation, open space and trails facilities within the plan area. The Otay Ranch Parks and Recreation Facility Implementation Plan (adopted by the City Council on October 28, 1993) identifies the parks facility improvement standards for Otay Ranch. The City of Chula Vista Park and Recreation Department conducted subsequent facilities needs assessments and proposed some modifications to the adopted Otay Ranch Plan. Modifications to

the adopted Otay Ranch Plan are included in the City of Chula Vista Parks and Recreation Master Plan, November 12, 2002. The SPA Park Master Plan identifies the proposed types, quantities and location of the facilities provided at each park site in the SPA Plan area. The variety of recreational elements proposed and the recreational opportunities envisioned are discussed in the Parks & Recreation chapter of the SPA Plan.

II.5.4.6.8 Financing Park Facilities

Chapter 17.10 of the Chula Vista Municipal Code, as amended, governs the financing of parkland and improvements. Included as part of the regulations are Park Acquisition and Development (PAD) fees established for the purpose of providing neighborhood and community parks. The Ordinance provides that fees are paid to the City prior to approval of a final subdivision map, or in the case of a residential development that is not required to submit a final map, at the time of the final building permit application.

II.5.4.6.8.1 SPA Plan

The project is responsible for both the park development component and the acquisition component PAD Fees. The project parkland demand is 24.53 acres based on CVMC 17.10 (Table H.3). The SPA Plan provides 59.6 net acres of parkland. The difference will be credited to the 28.21 acre residual parkland obligation from SPA One, Village 6 and 7, and 6.86 acres remaining as credit to the project developer.

TABLE H.7 Acquisition and Development (PAD) Fees (Preliminary Calculation) Development In-Lieu Component Only					
Development Phase	Dwelling Unit Type*		Development Component of PAD Fee's/DU Total		Total Fees Due
	SF	MF	SF @ \$3,777	MF @ \$2,803	
Blue	160	0	\$634,880	\$0	\$634,880
Red	258	459	\$1,023,744	\$1,351,296	\$2,375,040
yellow	327	185	\$1,297,536	\$544,640	\$1,842,176
Green	196	193	\$777,728	\$568,192	\$1,345,920
Orange	0	624	\$0	\$1,837,056	\$1,837,056
Purple	45	339	\$178,560	\$998,016	\$1,176,576
Teal	0	0	\$0	\$0	\$0
White	0	0	\$0	\$0	\$0
Pink	0	0	\$0	\$0	\$0
Brown	0	0	\$0	\$0	\$0
Subtotal	986	1800			
Total	2786		\$3,912,448	\$5,299,200	\$9,211,648
* Dwelling unit type - Note that number and type of units listed reflect 'Land Use Designations' listed in the Otay Ranch General Development Plan, since this level of information is all that is available at the time of this document's preparation irrespective of underlying zoning district. Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. Definitions of dwelling unit type used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC.					

PAD Fees are subject to periodic annual increases. Table H.9 identifies the fees calculated for the development component of the PAD fees while Table H.10 identifies the fees calculated for the parkland acquisition component of the PAD fees. These fees are estimates only and are dependent upon the actual numbers of units filed on the final map. Fees are also subject to change by the City Council. Single Family dwelling units are defined as all types of single family detached housing and condominiums. Multi-Family dwelling units are defined as all types of attached housing including townhouses, attached condominiums, duplexes, triplexes and apartments.

TABLE H.8 Park Acquisition and Development (PAD) Fees (Preliminary Calculation) Acquisition In-Lieu Component Only					
Development Phase	Dwelling Unit Types*		Acquisition Component of PAD Fees/D.U.Total		Total Fees Due
	SF	MF	SF @ \$4,994	MF @ \$3,707	
Blue	160	0	\$2,028,160	\$0	\$2,028,160
Red	258	459	\$3,270,408	\$4,318,272	\$7,588,680
Yellow	327	185	\$4,145,052	\$1,740,480	\$5,885,532
Green	196	193	\$2,484,496	\$1,815,744	\$4,300,240
Orange	0	624	\$0	\$5,870,592	\$5,870,592
Purple	45	339	\$570,420	\$3,189,312	\$3,759,732
Teal	0	0	\$0	\$0	\$0
White	0	0	\$0	\$0	\$0
Pink	0	0	\$0	\$0	\$0
Brown	0	0	\$0	\$0	\$0
Subtotal	986	1800			
Total	2786		\$12,498,536	\$16,934,400	\$29,432,936
* Dwelling unit type - Note that number and type of units listed reflect 'Land Use Designations' listed in the Otay Ranch General Development Plan, since this level of information is all that is available at the time of this document's preparation irrespective of underlying zoning district. Actual fee obligation calculation to be based on implementing ordinance definition of dwelling unit type irrespective of underlying zoning district containing said dwelling unit. Definitions of dwelling unit type used for calculating park obligations are based upon from the City's Parkland Dedication Ordinance CVMC chapter 17.10. These definitions differ from the way unit types are defined from a planning, land-use and zoning perspective that uses unit density per acre to categorize the type of unit. CVMC chapter 17.10 uses product type to categorize the type of unit distinguishing between attached and detached units. Consequently, the figures in this chart are preliminary estimates, and shall be recalculated at the time when the obligations are due as determined by chapter 17.10 of the CVMC.					

II.5.4.6.9 Financing Recreation Facilities

Chapter 17.10 of the CVMC, which requires the collection of fees from residential developments to pay for parkland acquisition and various park facilities within the City of Chula Vista, is subject to changes by the City Council from time to time. On October 25, 2005, the City Council approved Ordinance 3026 relating to the periodic annual review and adjustment of park acquisition and development fees. Approval of Ordinance 3026 resulted in an increase fee for parkland acquisition. In January of 2004 the Chula Vista City Council approved Ordinance 2945. This Ordinance amended Chapter 17.10 of the CVMC, which requires the collection of In-Lieu Park Acquisition and Development Fees from residential developments that are not required to submit a subdivision map or parcel map.

Some of the previous council actions that contributed to an increase in the in-lieu fees for park development and land acquisition are Ordinances No. 2886 and 2887 (both approved on November 19, 2002). Ordinance 2886 amended Chapter 17.10 of the CVMC to update the Parks Acquisition and Development Fees. Ordinance 2887 amended Chapter 3.50 of the Municipal Code, as detailed in the *"Public Facilities DIF, November 2002 Amendment"*, adding a new recreation component to the Public Facilities DIF, updating the impact fee structure and increasing the overall fee.

Chapter 17.10 of the Chula Vista Municipal Code, first adopted in 1971, details requirements for parkland dedication, park improvements and the collection of in-lieu fees (i.e., PAD fees) from developers of residential housing in subdivisions or in divisions created by parcel maps, both east and west of I-805. PAD fees cover parkland acquisition and the cost of related capital items associated with parkland development, including:

- Drainage Systems
- Street Improvements
- Lighted Parking Lots
- Concrete Circulation Systems
- Security Lighting
- Park Fixtures (*drinking fountains, trash receptacles, bicycle racks, etc.*)
- Landscaping (*including disabled accessible surfacing*)
- Irrigation Systems
- Restrooms and Maintenance Storage
- Play Areas (*tot lots, etc.*)
- Picnic Shelters, Tables, Benches
- Utilities
- Outdoor Sports Venues (*tennis courts, baseball/softball fields, basketball courts, multi-purpose sports fields, skateboard and roller blade venues*)

In addition to parks-related items, a 1987 revision called for the dedication, within community parks, of major recreation facilities to serve newly developing communities, including:

- Community centers
- Gymnasiums
- Swimming pools

Historically, PAD fees have not been sufficient to construct these additional large capital items. However, major recreation facilities are now funded through a newly created component of the Public Facilities DIF. The major capital items to be included in the new component are: community centers, gymnasiums, swimming pools, and senior/teen centers. Based on the Parks and Recreation Master Plan, 140,595 square feet of major recreation facilities will be required to meet new development growth through build-out at a gross construction cost of over \$32 million. Since the demand for major public recreation facilities

is created by residential development, facilities costs are not spread to commercial/industrial development. Table H.9 provides an estimate of the Recreational PDIF Fees for the project.

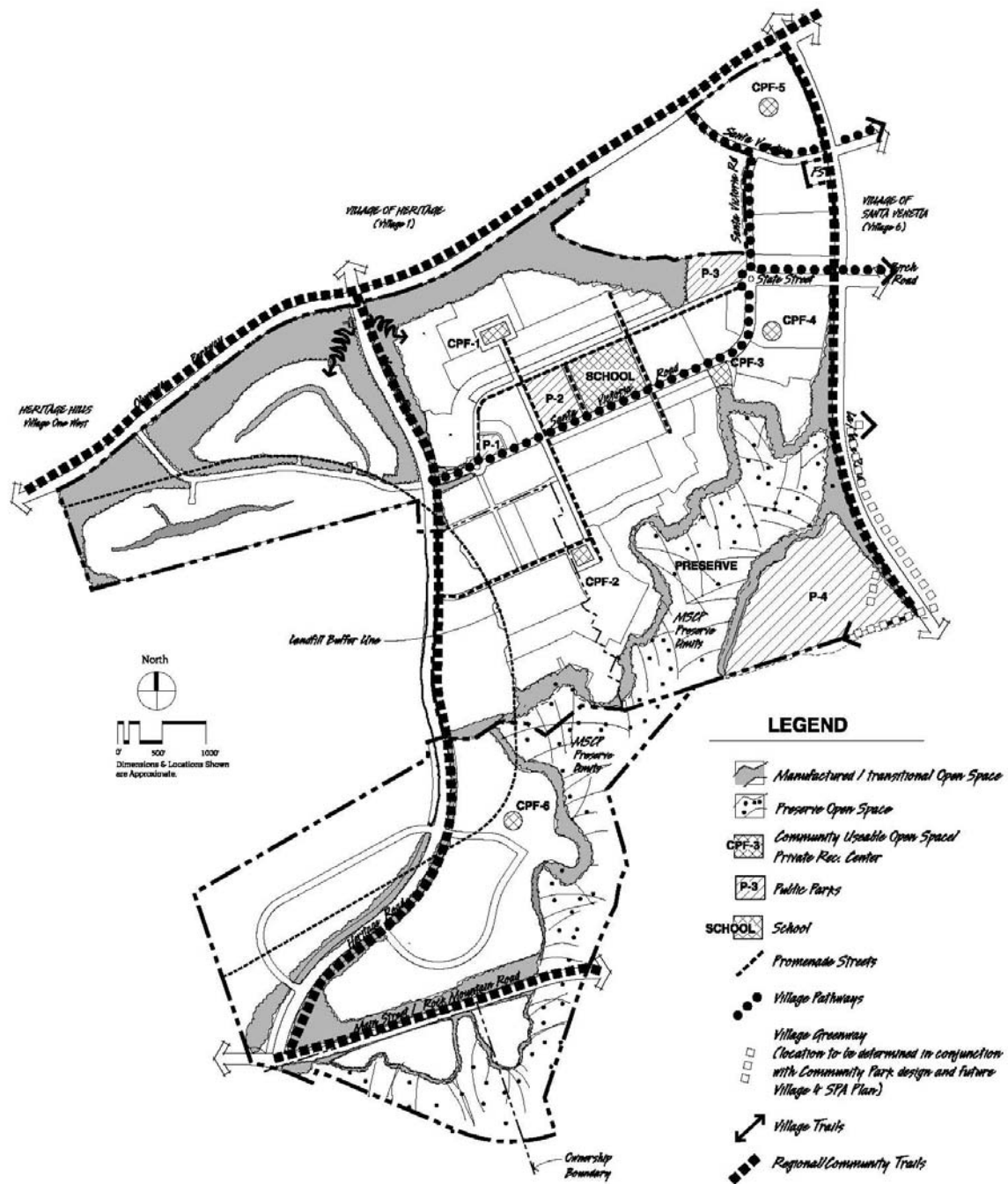
TABLE H.9 Otay Ranch Village 2, 3, Portion of 4 SPA Public Facilities Fees for Recreation³⁶ (Preliminary Calculation)					
Development Phase	Dwelling Units		Recreation Fee		Total
	SF	MF	\$1,211/SF Unit	\$866/MF Unit	
Blue	160	0	\$193,760	\$0	\$193,760
Red	258	459	\$312,438	\$397,494	\$709,932
Yellow	327	185	\$395,997	\$160,210	\$556,207
Green	196	193	\$237,356	\$167,138	\$404,494
Orange	0	624	\$0	\$540,384	\$540,384
Purple	45	339	\$54,495	\$293,574	\$348,069
Teal	0	0	\$0	\$0	\$0
White	0	0	\$0	\$0	\$0
Pink	0	0	\$0	\$0	\$0
Brown	0	0	\$0	\$0	\$0
Subtotal	986	1800	\$1,194,046	\$1,558,800	\$2,752,846
Total	2786		\$1,194,046	\$1,558,800	\$2,752,846

II.5.4.6.10 Threshold Compliance and Recommendations

Based upon the analysis contained in this section of the PFFP, the parks standard for both neighborhood and community parks measured on an area-wide basis east of Interstate 805 is projected to be met at the completion of the project.

On a project-level, the Neighborhood Park and the Community Park acreage provided within Otay Ranch Village 2, 3 and Portion of Village 4 SPA meets and exceeds the demand on a cumulative basis. In order to comply with the City's local park standard, it is the responsibility of the developer to comply with the City's Landscape Manual related to park planning, to grade the sites according to the approved plan, pay fees at a rate in effect at the time of final map approval and dedicate land, or a combination thereof, as required by CVMC Chapter 17.10, Parklands and Public Facilities unless otherwise approved by the Director of General Services.

³⁶ The PFDIF Fee is subject to change as it is amended from time to time. The total number of dwelling units and type of dwelling unit filed on the final map or for which building permits are required shall determine the actual fee amount.



Parks and Open Space Exhibit 11

II.5.4.7 WATER

II.5.4.7.1 Threshold Standard

1. Developer will request and deliver to the City a service availability letter from the Water District for each project, as defined by the City.
2. The City annually provides the San Diego County Water Authority, the Sweetwater Authority, and the Otay Water District with a 12 to 18 month development forecast and requests an evaluation of their ability to accommodate the forecast and continuing growth. The Districts' replies should address the following:
 - a. Water availability to the City and Planning Area, considering both short and long term perspectives.
 - b. Amount of current capacity, including storage capacity, now used or committed.
 - c. Ability of affected facilities to absorb forecasted growth.
 - d. Evaluation of funding and site availability for projected new facilities.
 - e. Other relevant information the District(s) desire(s) to communicate to the City and GMOC.

The growth forecast and water district response letters shall be provided to the GMOC for inclusion in its review.

II.5.4.7.2 Service Analysis:

The Otay Water District (OWD) will provide water service for Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Plan area. Annexation into Improvement Districts 22 and 27 will be required prior to water service being provided. The district has existing and planned facilities in the vicinity of the project site. Expanding the existing system can provide future water service.

The Overview of Water Service for Otay Ranch Villages 2, 3, and a Portion of 4 and PA 18b, November 28, 2005, Dexter-Wilson Engineering, Inc., is the basis for this section of the PFFP. The Dexter-Wilson report provides recommendations for improvements in zones 624 and 711 that are needed to provide water service to the proposed development and its alternatives. In addition to potable water, the OWD will be the purveyor of recycled water to the project.

The developer of the project will be required to prepare, for review and approval by the Otay Water District, a Subarea Water Master Plan (SAMP) prior to the processing of the tentative map and final engineering plans for the project. The SAMP will provide more detailed information on the project such as project phasing; pump station and reservoir capacity requirements, and extensive computer modeling to justify recommended pipe sizes. The OWD will not approve final engineering improvement plans until a SAMP has been approved for the project.

The design criteria implemented to evaluate the potable and recycled water systems for the project are established in accordance with the *Otay Water District Water Resources Master Plan, July 2002*. The design criteria are utilized for analysis of the existing water system as well as for design and sizing of proposed improvements and expansions to the existing system to accommodate demands in the study area.

II.5.4.7.3 Project Processing Requirements

The SPA Plan and the PFFP are required by the Growth Management Program to address the following issues for water services.

1. Identify phased demands in conformance with street improvements and in coordination with the construction of sewer facilities.
2. Identify location of facilities for onsite and offsite improvements in conformance with the master plan of the water district serving the proposed project.
3. Provide cost estimates and proposed financing responsibilities.
4. Identify financing methods.
5. A Water Conservation Plan shall be required for all major development projects (50 dwelling units or greater, or commercial and industrial projects with 50 EDUs of water demand or greater).

11.5.4.7.4 Existing Conditions

Most of the water used in the San Diego County Water Authority (SDCWA) area is imported from the Metropolitan Water District (MWD). MWD receives its water supply through the State Water Project and the Colorado River Aqueduct. The SDCWA conveys water from the MWD to local purveyors within San Diego County.

The project area is within the Central Service Area of the OWD. Potable water for the development will be supplied from the 624 and 711 pressure zones. Making two connections to the existing 16-inch line in Olympic Parkway and extending a line south in Heritage Road will expand the 624 Zone. The 711 Zone portion of the project will be served by connections to the existing 20-inch transmission line in Olympic Parkway at Heritage Road and La Media Road.

The OWD has three existing reservoirs in the 624 Zone. OWD connections 10 and 12 to the San Diego County Water Authority aqueduct fill these reservoirs. The total capacity of these reservoirs is approximately 50 mgd. A 711 Zone pump station lifts water from the 624 Zone to the 711 Zone Reservoirs. The District has recently completed construction of a 16 million gallon 711 Zone reservoir and now has adequate storage capacity to serve ultimate projected development in the 711 Zone.

Domestic water demand for the SPA Plan area will be estimated as a part of the SAMP and must be approved by the OWD. An analysis of available water supply will also be completed to assure that sufficient supplies are planned to be available as demand is generated by the project.

Current OWD policies regarding new subdivision development require the use of recycled water where available. Consistent with the Otay Ranch GDP, it is anticipated that recycled water will be used to irrigate street parkway landscaping, parks and manufactured slopes along open space areas (except in Preserve areas), and landscaped areas of commercial, industrial and multi-family sites.

The project is located in the 680 Zone for recycled water service. Currently the only source of recycled water is the District's 1.3 million gallons per day (mgd) capacity Ralph W. Chapman Recycling Facility. Ultimately, the primary source of recycled water for the SPA Plan area will be the South Bay Water Reclamation Plant. From this plant, the ultimate

recycled water system will consist of a series of pump stations, transmission piping and storage reservoirs that will provide recycled water to portions of Otay Ranch, including the SPA Plan project area.

In the Otay Ranch area, the existing recycled water distribution system serves Villages 1 and 5 and connections to the system to serve the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Plan are planned. Otay Ranch may eventually be required to oversize some of these facilities to meet recycled water demand outside of the project.

II.5.4.7.5 Adequacy Analysis

A. Water Conservation Plan

A Water Conservation Plan is required for all major development projects (50 dwelling units or greater, or commercial and industrial projects with 50 EDUs of water demand or greater). This plan is required at the Sectional Planning Area (SPA) Plan level or equivalent for projects which are not processed through a Planned Community Zone. The city has adopted guidelines for the preparation and implementation of the Water Conservation Plan.

The *Otay Ranch Villages 2, 3 and a Portion of Village 4 SPA II.8 Water Conservation Plan, February, 2006 Dexter-Wilson Engineering, Inc.*, provides an analysis of water usage requirements of the proposed project, as well as a detailed plan of proposed measures for water conservation, use of recycled water, and other means of reducing per capita water consumption from the proposed project, as well as defining a program to monitor compliance. The Water Conservation Plan is presented in conjunction with the SPA Plan document as Chapter 9 and therefore is not included in the PFFP.

B. Otay Ranch Village 2, 3, portion of Village 4 SPA Water Demand

Table I.1 presents the duty factors used in projecting the total average day potable and recycled water demands for the project. The required fire flows and durations are also listed. The City of Chula Vista utilizes the Uniform Fire Code for determining required fire flows and durations for new development. For single-family residences, a fire flow of 1,500 gpm for duration of two hours is typically required.

Table I.1 Water Duty Factors			
Land Use Designation	Domestic Demand	Required Fire Flow	Required Fire Flow Duration Hours
Single Family-Medium (1-3 DU/AC)	850 gpd/unit	1,500	2
Single Family-High (3-8 DU/AC)	500 gpd/unit	1,500	2
Multi-Family (>8 DU/AC)	300 gpd/unit	2,500	2
Schools	1,785 gpd/ac	3,500	3
Commercial	1,785 gpd/ac	3,000	3
CPF, Fire Station	893 gpd/ac	3,000	3
Industrial	893 gpd/ac	5,000	4
Irrigation (Recycled Water)	2,155 gpd/ac	--	--

Source: Dexter Wilson Engineering

Table I.2 provides the projected potable water demand for the project. The total estimated potable water use is approximately 1.38 mgd. The SPA Plan proposes a maximum of 2,786 dwelling-units. The estimated recycled water demand is 0.42 mgd (see Table I.3).

Table I.2 Otay Ranch Village 2, 3, and a Portion of Village 4 Projected Potable Water Demands				
Neighborhood	Land Use	Quantity	Unit Demand	Total Average Demand, gpd
VILLAGE: 2				
R-4	SF	160 units	500 gpd/unit	80,000
R-5	MF	130 units	300 gpd/unit	39,000
R-6	SF	63 units	500 gpd/unit	31,500
R-7	SF	44 units	500 gpd/unit	22,000
R-8	SF	51 units	500 gpd/unit	25,500
R-9	SF	101 units	300 gpd/unit	50,500
R-10	MF	90 units	300 gpd/unit	27,000
R-11	MF	144 units	300 gpd/unit	43,200
R-12	MF	295 units	300 gpd/unit	88,500
R-13	MF	149 units	300 gpd/unit	44,700
R-14	MF	137 units	300 gpd/unit	41,100
R-15	SF	45 units	500 gpd/unit	22,500
R-16	MF	74 units	300 gpd/unit	22,200
R-17	MF	119 units	300 gpd/unit	35,700
R-18A	SF	66 units	500 gpd/unit	33,000
R-18B	SF	46 units	500 gpd/unit	23,000
R-19	SF	83 units	500 gpd/unit	41,500
R-20	SF	83 units	500 gpd/unit	41,500
R-21	SF	64 units	500 gpd/unit	32,000
R-23	SF	71 units	500 gpd/unit	35,500
R-24	SF	41 units	500 gpd/unit	20,500
R-25	SF	68 units	500 gpd/unit	34,000
R-26	MF	75 units	300 gpd/unit	22,500
R-27	MF	110 units	300 gpd/unit	33,000
R-28	MF	85 units	300 gpd/unit	25,500
R-29	MF	152 units	300 gpd/unit	45,600
R-30	MF	180 units	300 gpd/unit	54,000
MU-1	MF	10 units	300 gpd/unit	3,000
MU-2	MF	12 units	300 gpd/unit	3,600
MU-3	MF	38 units	300 gpd/unit	11,400
MU-1	Commercial	1.1 acres	1,785/gpd/ac	1,960
MU-2	Commercial	1.4 acres	1,785 gpd/ac	2,500
MU-3	Commercial	4.3 acres	1,785 gpd/ac	7,680
C-1	Commercial	11.9 acres	1,785 gpd/ac	21,240

Table I.2 Continued Otay Ranch Village 2, 3, and a Portion of Village 4 Projected Potable Water Demands				
Neighborhood	Land Use	Quantity	Unit Demand	Total Average Demand, gpd
VILLAGE: 2				
IND-1	Industrial	51.4	893 gpd/ac	45,990
IND-1	Industrial	6.7	893 gpd/ac	5,980
IND-1	Industrial	29.7	893 gpd/ac	26,520
CPF-1	Community	1.2 acres	893 gpd/ac	1,070
CPF-2	Community	0.9 acres	893 gpd/ac	800
CPF-3	Community	1.7 acres	893 gpd/ac	1,520
CPF-4	Community	1.5 acres	893 gpd/ac	1,340
CPF-5	Community	0.8 acres	893 gpd/ac	710
S-1	School	10.3 acres	1,785 gpd/ac	18,390
P-1	Park	7.3 acres	--- ¹	---
P-2	Park	1.3 acres	--- ¹	---
P-3	Park	6.4 acres	--- ¹	---
P-4	Park	42.9 acres	--- ¹	---
HS	High School	50 acres	1,785 gpd/ac	89,250 ²
FS	Fire Station	1.5 acres	893 gpd/ac	1,340 ²
OS	Open Space	20.0 ³ acres	2,155 gpd/ac	43,100
Streets	Circulation	68.3 acres	---	---
Subtotal Village 2		2,786 units		1,211,800
Village 3				
IND-1	Industrial	54.3 acres	893 gpd/ac	48,490
IND-2	Industrial	26.4 acres	893 gpd/ac	23,580
IND-3	Industrial	50.1 acres	893 gpd/ac	44,740
IND-4	Industrial	26.4 acres	893 gpd/ac	23,580
IND-5	Industrial	11.3 acres	893 gpd/ac	10,090
IND-6	Industrial	7.8 acres	893 gpd/ac	6,960
CPF-1	Community	10.2 acres	893 gpd/ac	9,110
Subtotal Village 3		186.5 acres		166,730
Village 4				
P-4	Park	44.2 acres	---	14,500 ^{4, 5}
GRAND TOTAL				1,393,530
¹ To be irrigated with recycled water. ² Water demands for the high school and fire station are provided for reference only and not included in the total water demand. The September 10, 2002 Water System Analysis for the Otay Ranch SPA 1 High School site provided the demands for these facilities. ³ Only includes open space areas to be irrigated with potable water. ⁴ The majority of the Village 4 Community Park will be irrigated with recycled water, but a preliminary analysis indicated an estimated average potable water use of 14,500 gpd. ⁵ The community park and aquatics facility at P-4 will result in an estimated potable water demand of 14,500 gpd (City of Chula Vista).				

Source: Dexter Wilson Engineering

Normally, the potable water distribution system is designed to maintain static pressures

between 65 psi and 200 psi. This standard is used to initially divide a project between water service zones. According to Dexter Wilson Engineering, the potable water distribution system has been designed to yield a minimum of 40 psi residual pressure at any location under peak hour demand flows, and a minimum residual pressure of 20 psi during maximum day demand plus fire flow conditions. Potable water mains have been sized to maintain a maximum velocity of 10 feet per second under a maximum day plus fire flow scenario and a maximum velocity of 6 feet per second under peak hour flow conditions.

Table I.3 Otay Ranch Village 2, 3, and a Portion of Village 4 Land Use Projected Recycled Water Demands					
Land Use	Area in Acres	Percentage to be Irrigated	Irrigated Acreage	Recycled Water Irrigation Factor, gpd/ac	Average Recycled Water Demand, gpd
Open Space ¹	100.0	100	100	2,155	215,500
Parks	59.6	100	57.9	2,155	128,440
Commercial, CPF	28.2	10	2.8	2,155	6,030
School	10.3	20	2.1	2,155	4,530
MF Residential	129.6	15	19.4	2,155	41,810
Industrial	264.4	5	13.2	2,155	28,450
High School	50.0	20	10.0	2,155	21,550 ²
Fire Station	1.5	10	0.2	2,155	430 ²
TOTAL					424,760
¹ Preliminary Estimate ² Demands for the high school site and fire station are provided for reference only and not included in the project total. These facilities have been developed independent of the Villages 2, 3, and a Portion of Village 4 project.					

Source: Dexter Wilson Engineering

Landscape systems generally require a minimum of 80 psi at the meter to obtain adequate coverage of the irrigated area. Dexter Wilson Engineering expects that this minimum pressure can be achieved at all locations within the project. The primary criteria for sizing recycled water lines is the ability to meet peak hour recycled water demands while maintaining a maximum pipeline velocity of 8 feet per second.

II.5.4.7.6 Existing Water Facilities

Otay Water District will supply the potable water to the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA. The district currently relies solely on the San Diego County Water Authority (SDCWA) for water supply. The OWD has several connections to SDCWA Pipeline No. 4 which delivers filtered water from the Metropolitan Water District's filtration plant at Lake Skinner in Riverside County. The OWD also has a connection to the La Mesa - Sweetwater Extension Pipeline, which delivers, filtered water from the R.M. Levy Water Treatment Plant in the Helix Water District. Currently, this connection supplies water to the north portion of the OWD only. The OWD has a connection to the City of San Diego's water system in Telegraph Canyon Road and has an agreement that allows them to receive water from the Lower Otay Filtration Plant.

The project will be served by the Central Service Area of the OWD. This area of the District is supplied water from Connection Number 10 and 12 to the SDCWA aqueduct, which fills 624 Zone reservoirs. Water is then distributed within the 624 Zone and pumped to the 711 Zone storage and distribution system.

Senate Bills 610 (Chapter 643- Statutes of 2001) and Senate Bill 221 (Chapter 642. Statutes of 2001) amended state law effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures, which seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers' prior to approval of specified large development project. Both statutes also require this detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Both measures recognize local control and decision-making regarding the availability of water for projects and the approval of projects. To meet the requirements of Senate Bills 221 and 610, the City of Chula Vista formally requested that the OWD to prepare a water supply assessment report for the project. The OWD Board of Directors approved the Water Assessment and Verification Report for Otay Ranch Village Two, Village Three, portions of Village Four and Seven, and Planning Area 18b (Planning Area 18b has been incorporated into Village three) Sectional Planning Area Plan on January 14, 2004.

A. Potable Water

To receive potable water service, the project will need to expand the existing 624 and 711 Zone systems. The following paragraphs detail the existing potable water facilities located in the vicinity of the project. Figure 12 graphically shows the location of major facilities in the vicinity of the project.

624 Zone

The 624 Zone has three existing storage reservoirs. The 624-2 Reservoir is located adjacent to the San Diego County Water Authority Aqueduct between Otay Lakes Road and East H Street and has a capacity of 8.0 million gallons and is supplied by Connection Number 10 to the San Diego County Water Authority aqueduct. The 624-1 and 624-3 Reservoirs are supplied by Connection Number 12 and have a capacity of 12.4 million gallons and 30 million gallons, respectively.

In the vicinity of the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA, the only major 624 Zone water facilities are the 711/624 Zone pressure reducing station near the intersection of Heritage Road and Olympic Parkway and the 16-inch transmission pipeline in Olympic Parkway that is supplied by this station.

711 Zone

Currently, there is one pump station in the 711 Zone located at the 624-1 Reservoir site. This pump station is referred to as the Central Area Pump Station. This station pumps water from the 624 Zone system into the 711 Zone distribution system. This station also pumps water from the 624 Zone into two existing 711 Zone reservoirs located in the Eastlake Greens development. The 711 Zone Pump Station currently has five pumps (one standby), each rated for 4,000 gpm, which results in a firm station capacity of 16,000 gpm.

There are three existing reservoirs in the 711 Zone. Two reservoirs are located at the same

site within the Eastlake Greens development and have capacities of 2.8 and 2.2 million gallons for a total of 5.0 million gallons. A new 16.0 million gallon reservoir, 711-3, has recently been constructed north of the Rolling Hills Ranch project. After completion of the reservoir, the district has enough storage within the 711 zone to meet the demands from the ultimate projected development in this zone.

The major 711 Zone pipelines in the vicinity of the Village 2 project include 16-inch and 20-inch lines in Olympic Parkway, a 20-inch line in Heritage Road (north of Olympic Parkway), and a 16-inch line in La Media Road. A 12-inch stub has been provided in Heritage Road south of Olympic Parkway and a 20-inch stub has been provided in La Media Road south of Olympic Parkway.

B. Recycled Water

Currently, the only source of recycled water for the OWD is the Ralph W. Chapman Water Recycling Facility. This facility currently has a rated capacity of 1.3 mgd with a maximum production of approximately 1.1 mgd and could be expanded to an ultimate capacity of 2.50 mgd. Typically, summer demands exceed the 1.1 mgd plant capacity. The District has the capability to supplement the recycled water supply with the potable 980 Zone water system which has facilities in the area. Based on the OWD Water Resources Master Plan, the South Bay Water Treatment Plant will have an ultimate rated capacity of 15 mgd and the OWD will obtain capacity rights to 8.0 mgd of recycled water. This additional source of recycled water will allow the District to meet existing and future recycled water demands.

Two ponds in the District's Recycled Use Area provide storage of the effluent from the Ralph W. Chapman facility. The storage ponds have a high water line of approximately 950 feet and provide the storage and supply for the 950 Zone distribution system. Initially the 680 Zone distribution system will be supplied by pressure reducing off the 950 Zone system. The South Bay Water Reclamation Plant will ultimately supply the 680 Zone. Conveyance facilities to convey water from the South Bay Treatment Plant to the use areas are anticipated to be constructed in the next three to five years. A 16-inch 680 Zone pipeline has been constructed in Olympic Parkway along the northern boundary of Village 2. A 12-inch 680 Zone line has been constructed in Heritage Road with a 12-inch stub south of Olympic Parkway.

A 16-inch line has been constructed in La Media Road with a 12-inch stub south of Olympic Parkway.

II.5.4.7.7 Proposed Facilities:

A. Potable Water:

The Otay Ranch Village 2 project can receive water service by expanding the existing 624 and 711 Zone water systems. Figure 12 provides the major water facilities in the vicinity of the project and Figure 13 provides the recommended onsite water facilities for the project. As discussed previously, a Subarea Master Plan will be prepared prior to the approval of final engineering improvement plans for the project to identify the sizing and timing of all onsite and offsite water facilities for the project. All facilities within the boundaries of Villages 2, 3, Portion of Village 4 will be required to be constructed by the developer. The developer will be eligible for reimbursement for the construction of

facilities that are included in the District's Capital Improvement Program. A brief description of facilities by water service zone is provided below.

624 Zone:

The OWD Master Plan identifies 12-inch 624 Zone lines in Heritage Road, Otay Valley Road, and portions of Olympic Parkway. Since the only current source of 624 Zone water in the vicinity of the project is the 16-inch line in Olympic Parkway, the challenge in developing Villages 2, 3, and a Portion of Village 4 will be to provide adequate looping in the 624 Zone system. Ultimately a second source of 624 Zone water will be provided by a 12-inch line in Otay Valley Road that extends easterly to the future extension of Eastlake Parkway.

Within the 624 Zone, Otay Ranch Village 2, 3, and a Portion of Village 4 SPA will have lot elevations ranging from 200 feet to 475 feet. Service to these lots from the 624 Zone will result in maximum static pressures ranging from 65 psi to 184 psi.

711 Zone:

There are proposed 711 Zone transmission lines adjacent to Village 2 that are identified in the OWD Water Resources Master Plan. These facilities include a 16-inch line in La Media Road (between Olympic Parkway and Birch Road), a 12-inch line in La Media Road south of Birch Road and a 12-inch line in Heritage Road. Exhibit 13 shows the location of these facilities along with the other proposed improvements within Villages 2, 3, Portion of Village 4.

Within the 711 Zone, the Village 2 project will have lot elevations ranging from approximately 380 feet to 495 feet. Service to these lots from the 711 Zone will result in maximum static pressures ranging from 94 psi to 143 psi.

B. Recycled Water

The largest potential recycled water use areas in Otay Ranch Village 2, 3, and a Portion of Village 4 SPA include open space and parks. Recycled water may also be utilized to irrigate the common areas of schools, industrial, multi-family residential, and commercial facilities. The project will be served by the 680 Zone recycled water system. The OWD Capital Improvement Program identifies 680 Zone transmission lines in Heritage Road, La Media Road, and Otay Valley Road. Exhibit 14 shows these facilities and the other facilities recommended to serve Villages 2, 3, Portion of Village 4.

II.5.4.7.8 Financing Water Facilities:

The financing and construction of potable water facilities is provided by two methods:

Capacity Fees:

OWD's Capital Improvement Program (CIP) wherein the District facilitates design and construction of facilities and collects an appropriate share of the cost from developers through collection of capacity fees from water meter purchases. Capital Improvement Projects typically include supply sources, pumping facilities, operational storage, terminal storage, and transmission mains.

The OWD may use bond debt financing from Improvement Districts 22 and 27 to assist in the financing of the District's CIP program. CIP projects are paid for by capacity fees collected on the sale of water meters after building permit issuance.

Exaction:

The developer is required to finance, construct, dedicate water and recycled water facilities that serve only their development to the OWD.

Potable Water Improvement Costs

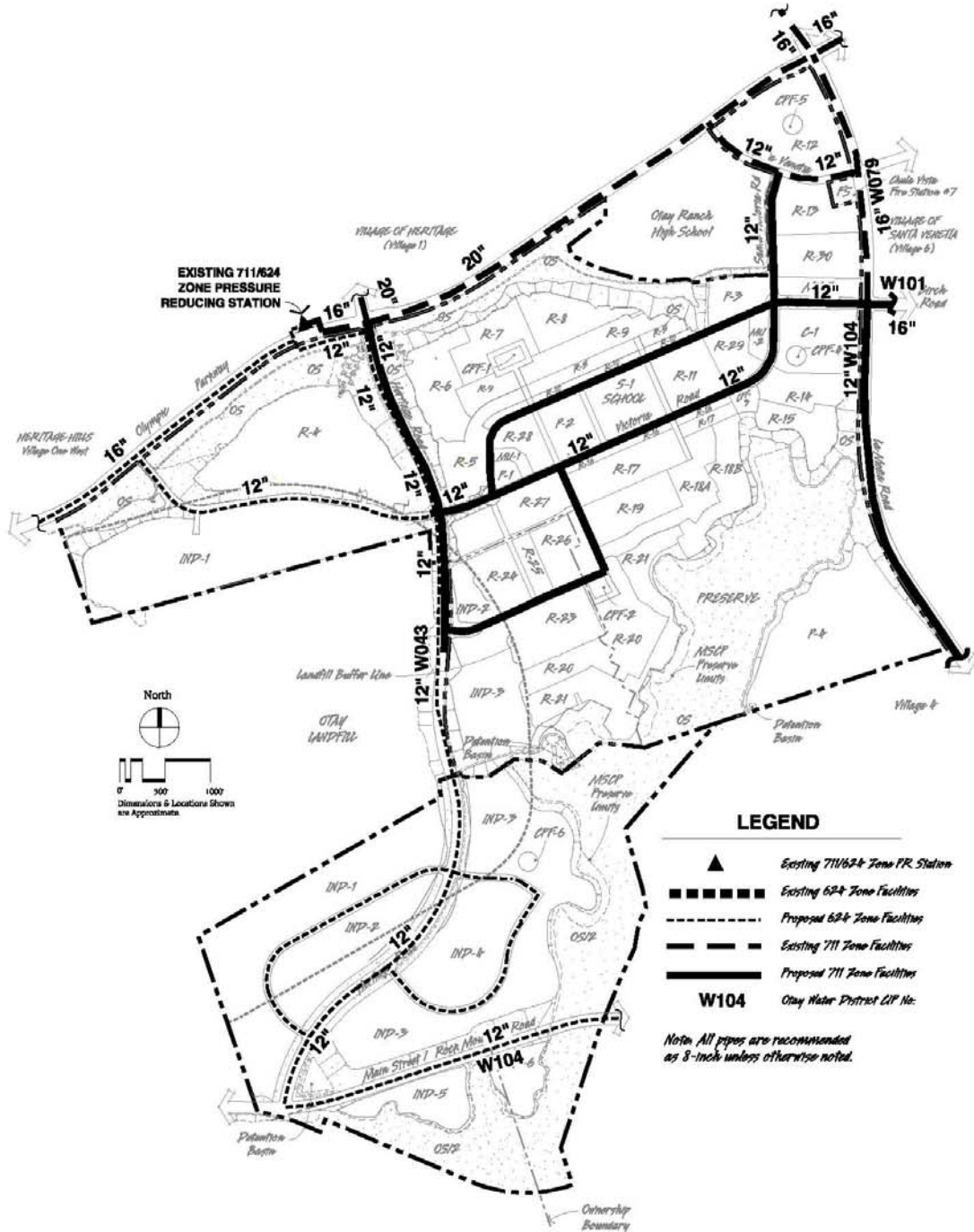
The total capital cost for potable water facilities will be determined at the time the system is designed and the SAMP is approved. In accordance with District Policy No. 26, the District may provide reimbursement for construction and design costs associated with development of these improvements.

Recycled Water Improvement Costs

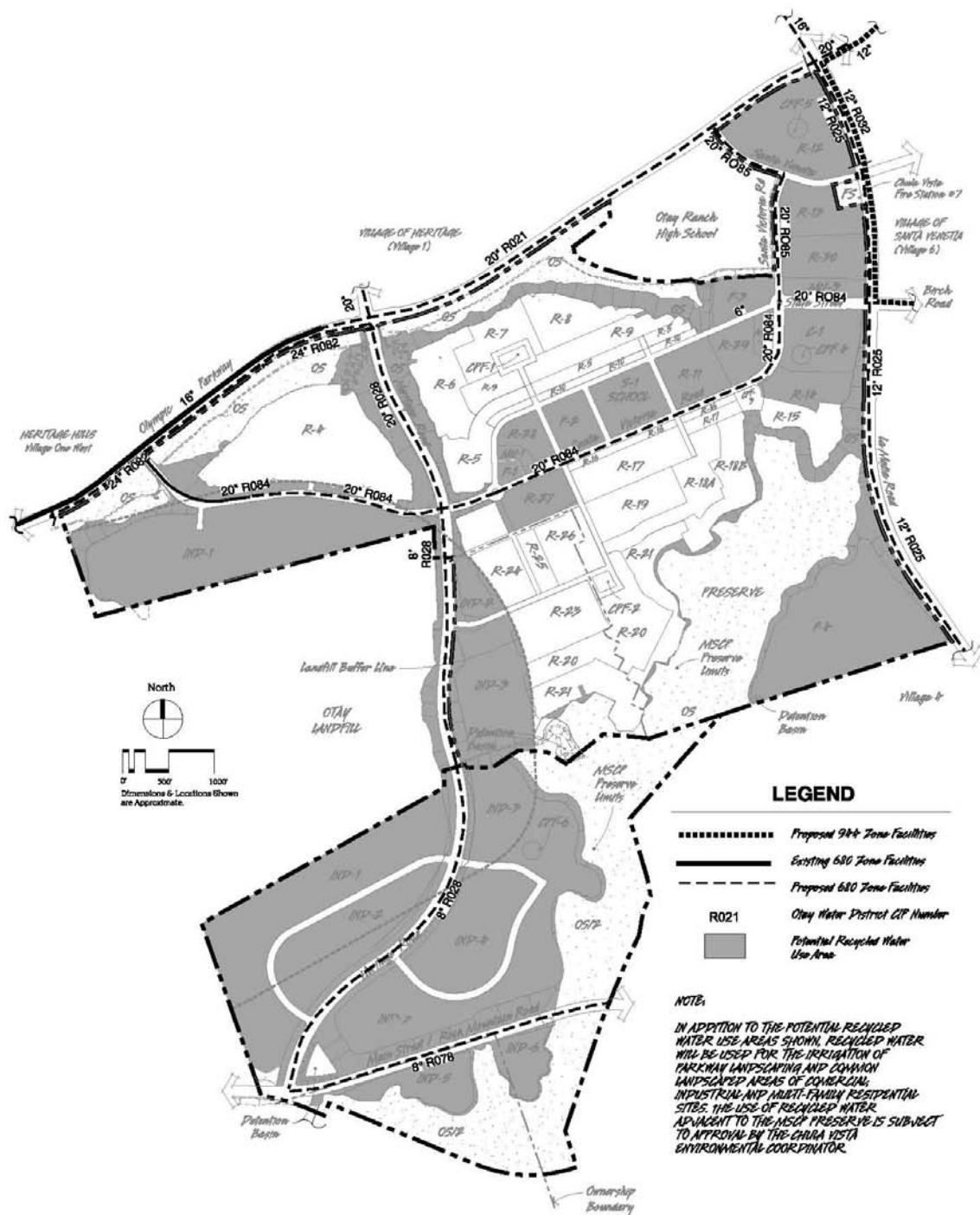
The total capital cost for recycled water facilities will be determined at the time the system is designed and the SAMP is approved. The District may provide reimbursement for construction and design costs associated with development of these improvements.

II.5.4.7.9 Threshold Compliance and Recommendations

1. The Otay Ranch Village 2, 3, and a Portion of Village 4 SPA shall have a district approved SAMP, prior to approval of final engineering plans.
2. The potable and recycled water systems have been designed and the costs identified by phase of development. The applicant shall be responsible for funding the required system improvements. The developer shall request and deliver to the City a service availability letter from the OWD prior to a final map being approved for Otay Ranch Village 2, 3, and a Portion of Village 4 SPA Project.



Proposed Water Exhibit 13



Proposed Recycled Water Facilities Exhibit 14

II.5.4.8 SEWER

II.5.4.8.1 Threshold Standard

1. Sewage flows and volumes shall not exceed City Engineering Standards.
2. The City will annually provide the City of San Diego Metropolitan Wastewater Department with a 12-18 month development forecast and request confirmation that the projection is within the City's purchased capacity rights and an evaluation of their ability to accommodate the forecast and continuing growth. As an alternative, the City of Chula Vista Public Works Department will gather the necessary data. The information provided to the GMOC shall include the following:
 - a. Amount of current capacity now used or committed.
 - b. Ability of affected facilities to absorb forecast growth.
 - c. Evaluation of funding and site availability for projected new facilities.
 - d. Other relevant information.

II.5.4.8.2 Service Analysis

The City of Chula Vista currently purchases capacity for wastewater treatment through the City of San Diego. Chula Vista oversees the construction, maintenance and the operation of the sewer trunk line system. The City Engineer is responsible for reviewing proposed developments and ensuring that the necessary sewer facilities are provided with each development project.

The Sewer Threshold Standard was developed to maintain healthful, sanitary sewer collection and disposal systems for the City of Chula Vista. Individual projects are required to provide necessary improvements consistent with the City of Chula Vista Wastewater Master Plan dated July 1989 and shall comply with all city engineering standards.

The source of information regarding the existing and recommended sewer facilities is from the *Overview of Sewer Service for Otay Ranch Village 2, 3, a portion of 4 & PA 18b, dated January, 2006 by Dexter Wilson Engineering, Inc.* This study is referred to as the Wilson Sewer Study throughout this PFFP.

The project is planned as a mixed density residential community of 2,786 dwelling units. With supporting uses that include an elementary school, parks, commercial, industrial, community purpose areas, and open space. Residential products will include single family detached and multi-family units. A community park that is located within Otay Ranch Village 4 will be developed as part of the Village 2 project. Village 3 proposes industrial lots. Exhibits 3 and 4 provide the proposed development plan for the project.

II.5.4.8.3 Project Processing Requirements

The SPA Plan and the PFFP are required by the Growth Management Program to address the following issues for Sewer Services:

1. Identify phased demands for all sewer trunk lines in conformance with the street improvements and in coordination with the construction of water facilities.
2. Identify location of facilities for onsite and offsite improvements, including reclaimed

water facilities, in conformance with the Wilson Study.

3. Provide cost estimates for all facilities and proposed financing responsibilities.
4. Identify financing methods.

II.5.4.8.4 Existing Conditions

The City of Chula Vista provides the sewer service for the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA development. The sewer collection system for the Project area is within the Poggi Canyon and Salt Creek/Wolf Creek Drainage Basins. Village 2 is within the Poggi Canyon and Wolf Creek/Otay River Drainage Basins. Village 3 is entirely within the Wolf Canyon/Otay River Basin. The City of Chula Vista has existing sewer facilities in the Poggi Canyon basin to serve a portion of the project, but there are currently no sewer facilities within the Wolf Canyon drainage basin.

Poggi Canyon Basin: The northern portion of the Village 2 project is within the Poggi Canyon Basin. The existing 18-inch Poggi Canyon Interceptor extends along the length of Village 2's frontage on Olympic Parkway.

Salt Creek Basin: Flows from the southern portion of Villages 2, 3, Portion of Village 4 SPA will be conveyed south to the Salt Creek Interceptor. The Salt Creek Interceptor is a 36-inch pipe that runs in an east-west direction adjacent to the southern boundary of Village 3 and is a 42-inch diameter pipe at this location. The Salt Creek interceptor has been completed.

II.5.4.8.5 Adequacy Analysis

Sewer flows generated by the project were estimated by Dexter Wilson Engineering. Their estimates were based on current city planning criteria for the permanent and interim on-site sewer system conditions. These estimated flows are the basis for design of new sewer facilities and the evaluation of existing facilities that will serve the project.

A. Wastewater Treatment:

In accordance with the City of Chula Vista Subdivision Manual, Dexter Wilson Engineering used the following sewage generation rate to estimate the total annual average wastewater flows produced from the project:

Table J.1 City of Chula Vista Sewage Generation Factors	
Land Use	Average Flow Factor
Single Family Residential	265 gpd/unit
Multi-Family Residential	199 gpd/unit
Commercial/ Industrial	2,500 gpd/acre
Community Purpose Facilities	2,500 gpd/acre
Elementary Schools	15 gpd/student
Junior & High Schools	20 gpd/student
Parks	500 gpd/acre

On-site and off-site collection, trunk, and interceptor facilities were evaluated based on this sewage flow. In addition, the city's design criteria are used for analysis of the existing sewer system as well as for design and sizing of proposed improvements and expansions to the system to accommodate the flows anticipated to be generated by the project and the project alternatives.

The Development Phasing Forecast Summary (2005 to 2009), as shown on Table J.2 lists 12,774 residential dwelling units to be finished by 2009. According to the Planning Department, approximately 20 acres of industrial, and 150 acres of commercial, in various categories of entitlement, are expected to be constructed through the year 2009. The City of Chula Vista has 20.875 mgd of capacity rights with the San Diego Metropolitan Water Authority (METRO). Applying the per day wastewater factors for each land use generates approximately 3,802,160 gallons per day of wastewater associated with the forecasted development. The average flow for Chula Vista into the METRO during 2003 was approximately 15.951 mgd. The GMOC Report projects the average city flow to increase to 19.508 mgd by the end of 2007. The forecasted development reduces the existing city sewer capacity surplus from 4.924 mgd to approximately 1.122 mgd. The city will acquire additional capacity from the City of San Diego's Metropolitan System for the city's buildout.

Table J.2			
Sewer capacity used by forecasted development			
Land Use Type	2009 Forecast	Generation Factor	Gallons per Day
Residential	12,744 DU	265 gpd/unit	3,377,160
Commercial	150 Acres	2,500 gpd/acre	375,000
Industrial	20 Acres	2,500 gpd/acre	50,000
Total used by Forecasted Development			3,802,160
Total remaining sewer capacity			1,122,000

According to the Dexter Wilson Engineering sewer study the projected flows from the project planning area are 1,409,060 gpd as shown in Table J.3. This Table provides the projected wastewater flows for the project by drainage basin. The total projected average sewage flow is approximately 628,130 gpd within the Poggi Canyon Basin and approximately 780,930 gpd within the Wolf Canyon/Otay River Basin.

Table J.3 Otay Ranch Village 2, 3, and a Portion of Village 4 Wastewater Flow Projections				
Neighborhood	Land Use	Quantity	Generation Factor	Average Sewage Flow, gpd
Poggi Canyon Basin				
R-4	SF	160 units	265 gpd/unit	42,400
R-5	MF	130 units	199 gpd/unit	25,870
R-6	SF	63 units	265 gpd/unit	16,700
R-7	SF	44 units	265 gpd/unit	11,660
R-8	SF	51 units	265 gpd/unit	13,520
R-9	S	101 units	265 gpd/unit	26,760
R-10	MF	90 units	199 gpd/unit	17,910
R-11	MF	144 units	199 gpd/unit	28,660
R-12	MF	295 units	199 gpd/unit	58,710
R-13	MF	149 units	199 gpd/unit	29,650
R-14	MF	137 units	199 gpd/unit	27,260
R-15	SF	45 units	265 gpd/unit	11,930
R-16	MF	74 units	199 gpd/unit	14,730
R-28	MF	85 units	199 gpd/unit	16,910
R-29	MF	152 units	199 gpd/unit	30,250
R-30	MF	180 units	199 gpd/unit	35,820
MU-1	MF	10 units	199 gpd/unit	1,990
MU-2	MF	12 units	199 gpd/unit	2,390
MU-3	MF	38 units	199 gpd/unit	7,560
MU-1	Commercial	1.1 ac	2,500 gpd/ac	2,750
MU-2	Commercial	1.4 ac	2,500 gpd/ac	3,500
MU-3	Commercial	4.3 ac	2,500 gpd/ac	10,750
C-1	Commercial	11.9 ac	2,500 gpd/ac	29,750
IND-1	Industrial	51.5 ac	2,500 gpd/ac	128,750
P-1	Park	1.4 ac	500 gpd/ac	700
P-2	Park	7.1 ac	500 gpd/ac	3,550
P-3	Park	6.9 ac	500 gpd/ac	3,450
CPF-1	Comm. Purpose	1.2 ac	2,500 gpd/ac	3,000
CPF-3	Comm. Purpose	1.7 ac	2,500 gpd/ac	4,250
CPF-4	Comm. Purpose	1.5 ac	2,500 gpd/ac	3,750
CPF-5	Comm. Purpose	0.8 ac	2,500 gpd/ac	2,000
S-1	School	750 students	15 gpd/student	11,250
HS	High School	1,500 students	20 gpd/student	30,000 ¹
FS	Fire Station	1.5 ac	2,500 gpd/ac	3,750 ¹
Subtotal Poggi Canyon		1,960 units		628,130

Table J.3 - Continued Otay Ranch Village 2, 3, and A Portion of Village 4 Wastewater Flow Projections				
Wolf Creek/Salt Creek Basin				
Village 2				
R-17	MF	119 units	199 gpd/unit	23,680
R-18A	SF	65 units	265 gpd/unit	17,225
R-18B	SF	48 units	265 gpd/unit	12,720
R-19	SF	83 units	265 gpd/unit	22,000
R-20	SF	83 units	265 gpd/unit	22,000
R-21	SF	64 units	265 gpd/unit	16,960
R-23	SF	71 units	265 gpd/unit	18,810
R-24	SF	41 units	265 gpd/unit	10,865
R-25	SF	68 units	265 gpd/unit	18,020
R-26	MF	75 units	199 gpd/unit	14,925
R-27	MF	110 units	199 gpd/unit	21,890
IND-2	Industrial	6.7 ac	2,500 gpd/ac	16,750
IND-3	Industrial	29.7 ac	2,500 gpd/ac	74,250
P-4 ²	Park	44.2 ac	500 gpd/ac	22,100
CPF-2	Comm. Purpose	0.9 ac	2,500 gpd/ac	2,250
Subtotal Village 2		827 units		314,445
Village 3				
IND-1	Industrial	54.5 ac	2,500 gpd/ac	136,250
IND-2	Industrial	26.4 ac	2,500 gpd/ac	66,000
IND-3	Industrial	50.1 ac	2,500 gpd/ac	125,250
IND-4	Industrial	26.4 ac	2,500 gpd/ac	66,000
IND-5	Industrial	11.3 ac	2,500 gpd/ac	28,250
IND-6	Industrial	7.8 ac	2,500 gpd/ac	19,500
CPF-1	Community	10.2 ac	2,500 gpd/ac	25,500
Subtotal Village 3				466,750
Subtotal Salt Creek Basin				781,195
GRAND TOTAL		2,786 units		1,409,325
¹ Sewer flow projections for the high school and fire station are provided for reference only and not included in the project total. These sites have been developed independently of the project. ² The P-4 Community Park is to be developed concurrently and phased with the Village 2 project, but is located in Village 4.				

Source: Dexter Wilson Engineering

B. Poggi Canyon Interceptor:

The existing Poggi Canyon Interceptor currently flows west in Olympic Parkway, crossing Interstate 805 and connects to the Date-Faivre Trunk Sewer that conveys flows to the Metro system facilities just west of Interstate 5.

The Poggi Canyon Basin Gravity Sewer Basin Plan dated July 31, 1997, was prepared to estimate ultimate projected sewage flows from within the basin and provide recommended sewer facility sizing to convey these flows. Development projections in the 1997 study were based on the Otay Ranch General Development Plan and included

1,201 EDUs for Village 2 within the Poggi Canyon Basin. Based on the current land use plan for Village 2, Table J.4 summarizes the projected EDUs that will convey flow to the Poggi Canyon Interceptor.

Table J.4 Otay Ranch Village 2, 3, 4 and A Portion of Village 4 Poggi Canyon Basin EDU Projection			
Land Use	EDU Factor	Project	
		Quantity	EDUs
SF Residential	1.0 EDU/unit	464 units	464
MF Residential	0.75 EDU/unit	1,496 units	1,122
Commercial	9.4 EDU/unit	18.7 ac.	176
Industrial	9.4 EDU/unit	51.5 ac.	484
Community Purpose	9.4 EDU/unit	5.2 ac.	49
Park	1.9 EDU/ac	15.4 ac.	29
S-1 School	265 gpd/EDU	11,250 gpd	42
High School	265 gpd/EDU	30,000 gpd	113
Fire Station	9.4 EDU/ac	1.5 ac.	14
Total			2,493

Source: Dexter Wilson Engineering

Table J.5 Poggi Canyon Sewer Basin Proposed Development Projections					
Development	Committed Units			Proposed Units	
	Total Units (EDU)	Constructed Units (EDU)	Remaining Units (EDU)	Additional Units (EDU)	Total with Additional Units (EDU)
ENTITLED DEVELOPMENTS					
Existing Sunbow I and West of I-805	1,765	1,765	---	---	1,765
Sunbow II	1,986	1,533	453	---	1,986
Village 1 West	520	317	203	---	520
Village 1 ORC	1,120	986	134	---	1,120
East Lake Land Swap	2,007	1,039	968	---	2,007
Village 5 ORC	592	215	377	---	592
Village 6	2,054	53	2,071	70	2,124
Village 1/5 McMillin	312	312	---	---	312
Freeway Commercial	1,132	---	1,132	---	1,132
Village 7	850	---	850	---	850
NON-ENTITLED DEVELOPMENT					
Village 2	1,201 ¹	---	1,201	1,292	2,493
Eastern Urban Center	189 ¹	---	189	---	189
TOTAL	13,728	6,220	7,578	1,362	15,090

¹ Based on the 7/31/97 Poggi Canyon Basin Gravity Sewer Plan

Source: Dexter Wilson Engineering

The Dexter Wilson Engineering study analyzed additional flow from 1,292 EDUs within the Poggi Canyon Basin as compared to the projections in the 1997 Poggi Canyon Study. Dexter Wilson Engineering used a computer model for the threshold analysis of the Poggi Canyon Interceptor. A summary of the results of the analysis is provided in Table J.5.

Improvements are currently being constructed in Eastlake Parkway that will allow the Eastlake Parkway Lift Station within the Eastlake Greens development to be abandoned in lieu of a gravity sewer line that will convey flows to the Poggi Canyon Interceptor. This lift station currently pumps flows to the Telegraph Canyon Basin. The ultimate development projections from Table J.5 include flows from development tributary to this lift station.

Table J.6 summarizes the available capacity for the threshold reaches of the Poggi Canyon Interceptor. Reach 205, an 18-inch section of line beneath I-805, has been recently completed. The next capacity threshold in the system is a section of existing 18-inch sewer line at Brandywine Avenue.

Table J.6 Poggi Canyon Interceptor Capacity Threshold Analysis								
Reach	Location	Max. ¹ Capacity, gpm	Recorded ² Peak Flow, gpm	Current Remaining Capacity		Olympic Parkway Pump Station EDU's	Available Capacity, EDU's	
				Peak Q, gpm	Avg. Q ³ gpm		@ 215 gpd/EDU	@ 265 gpd/EDU
P270	Brandywine Ave.	3,684	1,510	2,174	1,235	2,496	10,768	9,207
¹ Based on d/D = 0.85 ² Peak Flow data from 11/27/03 at Manhole No. 6836 ³ Peak Factor = 1.79								

Source: Dexter Wilson Engineering

Dexter Wilson Engineering estimated the available capacity in the threshold reaches by using two sewage generation factors. A factor of 215 gpd/EDU was used to estimate remaining capacity based on actual sewage generation rates from flow meter data. The 265 gpd/EDU factor was utilized to estimate available capacity pursuant to the City of Chula Vista Subdivision Manual. Table J.6 also reflects the increased capacity in the Poggi Canyon Interceptor resulting from the abandonment of the Olympic Parkway Pump Station.

Table J.7 summarizes the proposed development projections from Table J.5 and available capacity data from Table J.6 to identify whether or not sufficient capacity exists to serve future proposed development. Table J.7 indicates that the 18-inch line at Brandywine Avenue (P270) has adequate capacity to serve ultimate projected development (including all three Village 2 land use alternatives) with the assumption that a sewage generation rate of 215 gpd/EDU is used. Therefore no additional upgrades to the Poggi Canyon Interceptor are proposed.

Table J.7 Poggi Canyon Interceptor Capacity Threshold Summary					
Reach	Available Capacity, EDU's		Total Future EDU's	Excess Capacity @ Buildout, EDU's	
	@ 215 gpd/EDU	@ 265 gpd/EDU		@ 215 gpd/EDU	@ 265 gpd/EDU
Village 2 Project					
P270	10,768	9,207	8,940	1,828	267

Source: Dexter Wilson

B. Salt Creek Interceptor:

The November 8, 1994 Salt Creek Basin Gravity Sewer Analysis was prepared to project ultimate flows to determine the appropriate sizing of the Salt Creek Interceptor. Based primarily on the flow projections in the 1994 study, the Salt Creek Interceptor has been designed and is almost completely constructed. Table J.8 summarizes the EDUs that were projected from the project area in the 1994 study. Table J.9 provides the projected sewage flows to the Salt Creek Interceptor based on the current land use plan for Village 2.

TABLE J.8 Wolf Canyon/Salt Creek Interceptor EDU Projections from 11/94 Study	
Description	EDUs
Village 2	1,023
Village 3	1,509
Total	2,532

Source: Dexter Wilson

Table J.9 Wolf Canyon/Salt Creek Interceptor EDU Projections From Current Land Use Plan			
Land Use	EDU Factor	Quantity	EDUs
Village 2			
SF Residential	1.0 EDU/unit	522 units	522
MF Residential	0.75 EDU/unit	304 units	228
Community Purpose	9.4 EDU/ac	.9 ac	8
Industrial	9.4 EDU/ac	36.4 ac	342
Subtotal Village 2 .			1,100

Source: Dexter Wilson

Table J.9 - Continued Wolf Canyon/Salt Creek Interceptor EDU Projections From Current Land Use Plan			
Village 3/PA 18b			
Industrial	9.4 EDU/ac	176.5 ac	1,659
Community Purpose	9.4 EDU/ac	10.2 ac	96
Subtotal Village 3/PA 18b			1,755
Village 4 Community Park			84
Total Wolf Canyon/Salt Creek Sewer			2,939
Minus 1994 Study Projections			(2,532)
Subtotal			407
Plus Added Poggi Canyon EDUs			1,292
Total Net Salt Creek Increase			1,699

Source: Dexter Wilson

Table J.9 indicates that the current development plan results in an increase of 1,699 EDU's that will be served by the Salt Creek Interceptor when compared to the November 1994 Salt Creek Basin Study. This increase in development has more than been offset by upstream developments that were included in the November 1994 study, but are now proposed to remain as open space. Otay Ranch Villages 14, 15, and Planning Area 16 have recently been sold to the State of California and will be preserved as natural open space. The November 1994 Salt Creek Basin Sewer Study had projected a total of 3,105 EDU's of development from Villages 14, 15, and Planning Area 16. Due to this decrease in projected development from upstream areas of the basin, there will be more than enough capacity in the Salt Creek Interceptor to serve the current proposed development of the project.

II.5.4.8.6 Recommended Sewerage Facilities

The sewer facility improvements required to serve Villages 2, 3, Portion of Village 4 SPA include onsite gravity sewer lines and contributions for the construction of the Poggi Canyon Interceptor and the Salt Creek Interceptor. As discussed in section II.5.4.8.5, Adequacy Analysis, offsite improvements to a few sections of the Poggi Canyon Interceptor may be required. The sizing of onsite sewer lines in the Dexter Wilson report were considered preliminary and shall be verified during the improvement plan preparation process when slopes and alignments for sewer lines have been better established. Exhibit 19 shows the proposed major sewer facilities that are in the vicinity of the project.

II.5.4.8.6.1 Improvements

The recommended onsite sewer lines internal to Villages 2 and 3 will range from 8-inch to 12-inch gravity sewers. The required sizing should be verified once pipe slopes have been better defined during the preparation of the tentative map and/or final engineering of the project. Exhibit 20 provides the recommended onsite sewer line sizing for the project.

II.5.4.8.6.2 Phasing

The project will generally be developed from north to south. The following is a discussion of phasing alternatives.

Village 2

According to the Dexter Wilson Report constructing gravity sewer lines and connecting to the Poggi Canyon Interceptor in Olympic Parkway permits the development of the northern portion of Village 2. The only proposed offsite improvement is the Reach 205 capital improvement project beneath I-805, which has been recently completed. Sewer service to the southern portion of Village 2 will be provided by constructing a gravity sewer line in Heritage Road to convey flows to the Salt Creek Interceptor (see Exhibit 15).

Village 3

A new gravity sewer line in Heritage Road will connect Village 3 to the Salt Creek Interceptor. The development of Village 3 cannot occur until the construction of this gravity sewer line is completed.

Community Park

The Village 4 community park that is to be developed concurrent with Village 2 will be served by constructing a gravity sewer line south to a future sewer line in Rock Mountain Road. However, there is the possibility that in the early phases of development the Community Park would be developed prior to the availability of gravity sewer service to the south. If this occurs, an interim sewage lift station would be required to pump flow from the park site northerly in La Media Road to an existing gravity sewer line at the intersection of Birch Road. Implementation of the interim sewage lift station may result in the need to hold back 84 EDUs in Village 2 proper, until such time the interim station is abandoned and replaced with the permanent Salt Creek interceptor gravity sewer for the community park (Once Rock Mountain Road is available to receive permanent gravity sewer).

II.5.4.8.7 Financing Sewerage Facilities

To fund the necessary improvements to the Poggi Canyon and Salt Creek Interceptors, development impact fees have been established by the City of Chula Vista. A discussion of the required fees is provided below.

A. Poggi Canyon Basin Impact Fees

To serve ultimate projected development within the drainage basin, some reaches of the existing Poggi Canyon Interceptor will have to be upgraded and the interceptor is being extended to the east to serve the Eastlake development. The July 31, 1997, Poggi Canyon Basin Gravity Sewer Basin Plan was prepared for the City of Chula Vista by Wilson Engineering to establish future improvements required to the Poggi Canyon Interceptor and to establish a fee for funding these improvements. City of Chula Vista Ordinance Number 2716 established the fee to be paid by future development within the Poggi Canyon Basin. Table J.10 summarizes the fees to be paid for each land use type. The Poggi Canyon fee will fund the extension of the Poggi Canyon Interceptor to the westerly side of future State Route 125. This interceptor has recently been constructed in Olympic Parkway adjacent to Village 2. The City is currently in the process of updating the Poggi Canyon Basin Impact Fees.

Table J.10 City of Chula Vista Poggi Canyon Basin Impact Fees	
Land Use	Fee
Single Family Residential	\$400/EDU
Multi-Family Residential	\$300/EDU
Commercial	\$3,572/acre
Industrial	\$3,572/acre
Community Purpose	\$3,572/acre
Elementary School	\$12,856/site
Junior High School	\$40,000/site
High School	\$68,572/site
Park	\$716/site

The project estimated Poggi Canyon Basin Fee is \$1,975,855 (see Table J.11). The estimated fee may change depending upon the final number of dwelling units, changes in acreages and/or fee revisions by the City Council.

Table J.11 Village 2, 3, Portion of Village 4 SPA Poggi Canyon Basin Impact Fees											
Phase	Residential				Com'l/Ind/CPF		School		Park		Total
	SF Units	Fee/Unit \$400	MF Units	Fee/Unit \$300	Com'l Ind. CPF	Fee/Ac. \$3,572	Elem Sch	Fee/Site \$12,856	Park	Fee/Site \$716	
Blue	160	\$64,000	0	\$0	0	\$0	1	\$12,856	1	\$716	\$77,572
Red	258	\$103,200	459	\$137,700	1.2	\$4,286	0	\$0	0	\$0	\$245,186
Yellow	327	\$130,800	185	\$55,500	0.9	\$3,215	0	\$0	0	\$0	\$189,515
Green	196	\$78,400	193	\$57,900	1.7	\$6,072	0	\$0	0	\$0	\$142,372
Orange	0	\$0	624	\$187,200	0.8	\$2,858	0	\$0	0	\$0	\$190,058
Purple	45	\$0	339	\$101,700	13.4	\$47,865	0	\$0	0	\$0	\$149,565
Teal	0	\$0	0		87.9	\$313,979	0	\$0	0	\$0	\$313,979
White	0	\$0	0		0	\$0	0	\$0	1	\$716	\$716
Pink	0	\$0	0		80.9	\$288,975	0	\$0	0	\$0	\$288,975
Brown	0	\$0	0		105.8	\$377,918	0	\$0	0	\$0	\$377,918
Total	986	\$376,400	1800	\$540,000	293	\$1,045,167	1	\$12,856	2	\$1,432	\$1,975,855

A. Salt Creek Basin Impact Fees

The November 1994 Salt Creek Basin Study was prepared by Wilson Engineering to establish a fee to fund future improvements to the Salt Creek Interceptor System. This fee is required to be paid by all future developments within the Salt Creek Drainage Basin to fund improvements required to serve ultimate development within the drainage basin. City of Chula Vista Ordinance Number 2617 established the fee to be paid for future development within the Salt Creek Basin that connects into the existing system. Table J.12 summarizes the fees to be paid by each land use type. These fees are typically collected at the time building permits are issued.

Table J.12 City of Chula Vista Wolf Canyon/Salt Creek Basin Impact Fees	
Land Use	Fee
Single Family Residential	\$284/unit
Multi-Family Residential	\$213/unit
Commercial/ Industrial	\$2,840/acre
Community Purpose	\$2,840/acre
Schools	\$1,136/acre
Park	\$568/acre

The project estimated Salt Creek Basin Fee is \$1,527,182 (see Table J.13). The estimated fee may change depending upon the final number of dwelling units, changes in acreages and/or fee revisions by the City Council.

Table J.13 Village 2, 3, Portion of Village 4 SPA Wolf Canyon/Salt Creek Basin Impact Fees											
Phase	Residential				Com'l/Ind/CPF		School		Park		Total
	SF Units	Fee/Unit \$284	MF Units	Fee/Unit \$213	Com'l Ind. CPF Acres	Fee/Ac. \$2,840	Elem Sch	Fee/Ac. \$1,136	Park	Fee/Ac. \$568	
Blue	160	\$45,440	0	\$0	0	\$0	10.3	\$11,701	0	\$0	\$57,141
Red	258	\$73,272	459	\$97,767	1.2	\$3,408	0	\$0	8.5	\$4,828	\$179,275
Yellow	327	\$92,868	185	\$39,405	0.9	\$2,556	0	\$0	0	\$0	\$134,829
Green	196	\$55,664	193	\$41,109	1.7	\$4,828	0	\$0	0	\$0	\$101,601
Orange	0	\$0	624	\$132,912	0.8	\$2,272	0	\$0	0	\$0	\$135,184
Purple	45	\$0	339	\$72,207	13.4	\$38,056	0	\$0	6.9	\$3,919	\$114,182
Teal	0	\$0	0		87.9	\$249,636	0	\$0	0	\$0	\$249,636
White	0	\$0	0		0	\$0	0	\$0	44.2	\$25,106	\$25,106
Pink	0	\$0	0		80.9	\$229,756	0	\$0	0	\$0	\$229,756
Brown	0	\$0	0		105.8	\$300,472	0	\$0	0	\$0	\$300,472
Total	986	\$267,244	1800	\$383,400	293	\$830,984	10.3	\$11,701	59.6	\$33,853	\$1,527,182

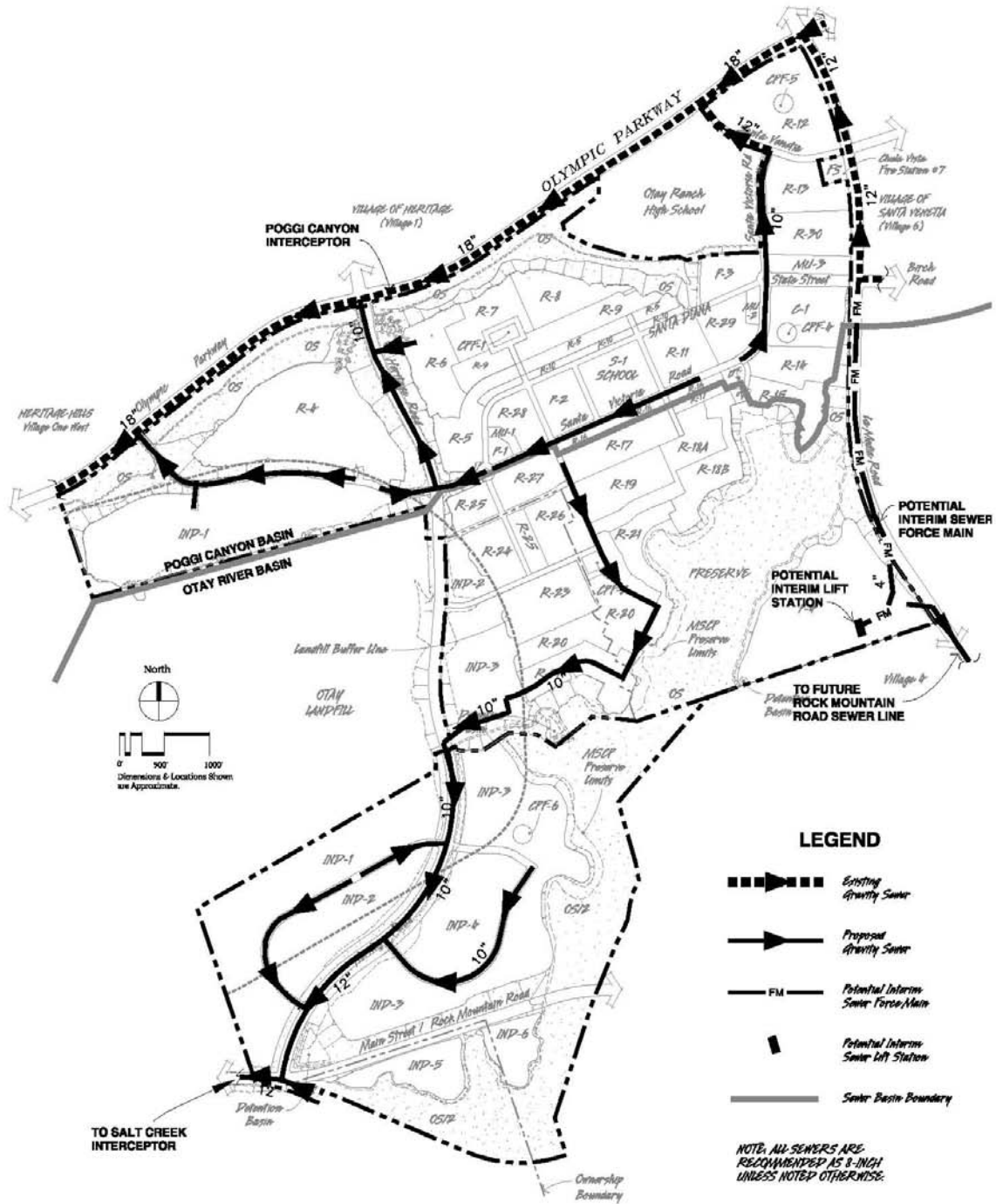
II.5.4.8.8 Threshold Compliance and Recommendations

Facilities to accommodate sewer flows have been identified in the Wilson Report. The construction of new sewer lines must be phased in before the construction of streets.

All gravity sewers will be designed to convey peak wet weather flow. For pipes with diameter of 12 inches and smaller, the sewers will be designed to convey this flow when flowing half full. For pipes of diameter larger than 12 inches, the sewers will be designed to convey peak wet weather flow when flowing at three-fourths of the pipe depth. All new sewers will be designed to maintain a minimum velocity of two feet per second (fps) at design capacity to prevent the deposition of solids.

The applicant for the project shall:

1. Underwrite the cost of all studies and reports required to support the addition of sewer flows to existing lines.
2. Assume the capital cost of all sewer lines and connections identified herein, including community park interim sewage lift station and sewer force main.
3. Pay all current sewer fees required of the City of Chula Vista.
4. Comply with Section 3-303 of the City of Chula Vista Subdivision Manual.
5. Construct off-site connections as required by the City Engineer.



**Proposed On-site Sewer Facilities
Exhibit 15**

II.5.4.9 DRAINAGE

II.5.4.9.1 Threshold Standard

1. Storm water flows and volumes shall not exceed City Engineering Standards.
2. The GMOC shall annually review the performance of the City's storm drain system to determine its ability to meet the City's goals and objectives.

II.5.4.9.2 Service Analysis

The City of Chula Vista Public Works Department is responsible for ensuring that safe and efficient storm water drainage systems are provided concurrent with development in order to protect the residents and property within the city. City staff is required to review individual projects to ensure that improvements are provided which are consistent with the drainage master plan(s) and that the project complies with all City engineering drainage standards.

The City of Chula Vista Public Facilities Plan Flood Control Summary Report, dated March 1989 (Phase II) provides details for the city planned drainage facilities.

The SPA Plan drainage improvements are identified in the *Master Drainage Study, for Otay Ranch Village 2, 3 & 4*, dated July 14, 2005, by Hunsaker & Associates. The Hunsaker Study was prepared to assess the existing and developed condition drainage conditions for the project. Runoff from the northern portion of the Village 2 property drains to Poggi Canyon Creek while the southern portion of the site drains to Wolf Canyon Creek. The Village 4 park site also drains to the Wolf Canyon Creek. The Village 3 site drains to unnamed tributaries of the Otay River.

The stated purpose of the Hunsaker Study is as follows:

- Prepare hydrologic models to quantify existing and developed condition peak flows to Poggi Canyon Creek.
- Prepare hydrologic models to quantify existing and developed site runoff to Wolf Canyon Creek.
- Prepare hydrologic models to quantify existing and developed site runoff to Otay Valley Road.
- Design detention facilities to maintain developed condition peak flowrates below the pre-developed peak flowrates to Poggi Canyon Creek, Wolf Canyon Creek, and Otay Valley Road

The Poggi Canyon Creek watershed has been studied previously in association with the construction of Olympic Parkway between Brandywine Avenue and proposed SR-125. The Hunsaker Study amended the original *Master Drainage Study, for Otay Ranch Village 2, 3 & 4*, dated September 12, 2003, by Hunsaker & Associates. Hunsaker & Associates relied upon numerous studies that include the following:

1. *City of Chula Vista Subdivision Manual* dated July 1998.
2. *Preliminary Regional Drainage Study, Major Drainage Patterns and Facilities, for Otay Ranch Village 6*, revised September 4, 2001 by P&D consultants.

3. *Master Drainage Study for Poggi Canyon Creek*; dated October 14, 1999 by Hunsaker & Associates.
4. *Addendum to Master Drainage Study for Poggi Canyon Creek*; dated September 21, 2001 by Hunsaker & Associates.

The Otay Ranch Village 2, 3, and a Portion of Village 4 SPA project is under the jurisdiction of the San Diego Regional Water Quality Control Board (SDRWQCB). The Otay Ranch Village 2, 3, and a Portion of Village 4 SPA project is subject to the National Pollutant Discharge Elimination System (NPDES) requirements both during and after construction. NPDES requirements stem from the Federal Clean Water Act and are enforced either by the State Water Resources Control Board (SWRCB) or the SDRWQCB. Stormwater runoff pollution prevention and control measures for the project are identified in the *Preliminary Water Quality Technical Report for Otay Ranch Villages 2, 3 and 4*, dated September 14, 2004, by Hunsaker & Associates.

II.5.4.9.3 Project Processing Requirements

The SPA Plan and the PFFP are required to address the following issues for drainage issues:

1. Identify phased demands.
2. Identify locations of facilities for onsite and offsite improvements.
3. Provide cost estimates.
4. Identify financing methods.

II.5.4.9.4 Existing Conditions

The project area currently contains no development and is characterized by rolling hills and heavily grazed land. Runoff from the existing site drains via incised canyon channels to either Poggi Canyon, Wolf Canyon or unnamed tributaries of the Otay River.

A. Poggi Canyon

The Hunsaker Study assumed the full development of the Poggi Canyon watershed east of La Media. La Media was assumed to be extended to its proposed intersection with Birch Road. Full development is also assumed for the Otay Ranch ownership north of Olympic Parkway and west of La Media (Village 1). No development is assumed for the Otay Ranch Village 2 property.

The Poggi Canyon Creek channel enters the Otay Ranch property just downstream of the existing 7 foot x 8 foot box culverts under La Media. Runoff from McMillin's Otay Ranch Village 6 and the Freeway Commercial Area empties into Poggi Canyon Creek via an 84-inch and a 96-inch RCP in the downstream headwall of the box culverts. At that location, runoff from the McMillin property (south of Olympic Parkway) confluences with runoff from the existing Eastlake Greens development, the Eastlake Land Swap Area, as well as the Otay Ranch Company's portion of Village 6, Village 12 and Otay Ranch Village 5. The combined runoff then flows in a westerly direction via a constructed channel on the north side of Olympic Parkway through the Otay Ranch Village 1 - Phase 4 area.

The Poggi Canyon Creek channel crosses under Olympic Parkway via two box culverts near the boundary of Village 1 - Phases 4 and 7. At the downstream headwall, runoff from the graded Otay Ranch High School site confluences with runoff in Poggi Canyon Creek.

Between the high school site and Heritage Road, runoff is conveyed via an existing trapezoidal channel. Runoff from the undeveloped Village 2 site enters the channel from the south along this reach. A natural channel enters the constructed Poggi Canyon Creek channel just upstream of the Heritage Road crossing. Runoff from the developed Otay Ranch Village 1 - Phase 7 site also enters the main channel at this location.

Downstream of the Heritage Road culvert structure, runoff flows in a westerly direction via a constructed 50-foot wide trapezoidal channel. Again, runoff from the undeveloped Village 2 site drains to the channel from the south.

Near the proposed Village 2 entrance road from Olympic Parkway, runoff from Otay Ranch Village One West enters the channel from the north. The combined runoff flows through two box culverts under the proposed entrance road and into the existing Poggi Canyon Regional Detention Facility. The existing detention basin is located at the western boundary of the Otay Ranch Company's ownership.

The existing detention facility was designed to mitigate the 100-year developed condition peak flow rate in Poggi Canyon below the pre-developed 100-year peak flow. Per the October 14, 1999 "Master Drainage Study for Poggi Canyon Creek," the pre-developed 100-year flow at the detention basin location was determined to be roughly 1,300 cfs. Detention calculations showed the existing basin, with a maximum storage volume of 44 acre-feet and two box culverts, capable of mitigating the developed condition 100-year routed outflow from the basin to roughly 950 cfs (well below the pre-developed 100-year design flow of 1,300 cfs).

B. Wolf Canyon

Since no detailed study of Wolf Canyon was available, a new HEC-1 model was prepared by Hunsaker. In existing conditions, the Wolf Canyon watershed contains undeveloped land, which is characterized by rolling hills and heavily grazed land. The Wolf Canyon area east of the proposed extension of La Media (south of Birch Parkway) will be home to Otay Ranch Village 7 and the proposed Eastern Urban Center.

Wolf Canyon Creek's main drainage course forms the southern and eastern boundary for Otay Ranch Village 2. A large tributary, named Baldwin Branch, conflues with Wolf Canyon Creek near the downstream limit of the Otay Ranch Village 2 ownership. A significant portion of the undeveloped Village 2 property drains to Baldwin Branch while the remainder drains directly to Wolf Canyon Creek.

Following the Baldwin Branch - Wolf Canyon confluence, Wolf Canyon Creek flows in a southerly direction just east of the Village 3 property boundary. Wolf Canyon discharges runoff to the Otay River in the existing rock quarry area.

The following table summarized pre-developed versus developed condition flows at the Village 4 Park site outlet and at the location at which Wolf Canyon Creek confluence's with the Village 2 basin outflows

Table K.1 Summary of Wolf Canyon Creek Pre-Development Area				
Location	Pre- Developed Drainage Area (ac)	Pre- Development Q100 (cfs)	Development Drainage Area (ac)	Routed Outflow (cfs)
Wolf Canyon Creek at Village 4 Outfall	523	537	533 (+10)	494 (-43)
Wolf Canyon Creek at Village 2	822	859	832 (+10)	704 (-118)

Source: Hunsaker & Associates

C. Otay Valley Road Watershed

Runoff from the Village 3 property drains to one of two unnamed tributaries of the Otay River. Both of these tributaries are located west of the confluence of Wolf Canyon and the Otay River. In existing conditions, this watershed area contains no development.

II.5.4.9.5 Proposed Facilities

A. Storm Drainage

The development of Otay Ranch Village 2 includes the construction of single-family residential homes, multi-family units, commercial sites, industrial sites, and major traffic arterials while development of Village 3 includes the construction of industrial sites. Development of Village 4 will consist of a Community park.

The overall drainage divides between Poggi Canyon and Wolf Canyon will vary only slightly as compared to existing conditions. Runoff within the developed Village 2 site will be directed toward either Poggi or Wolf Canyon Creeks via internal storm drain systems. Existing and developed areas and 100-year flows for each watershed are summarized in the following table:

Table K.2 Existing and developed areas and 100-year flows				
Watershed	Pre-Development Drainage Area (ac)	Pre-Development Q100 (cfs)	Developed Drainage Area (ac)	Routed Outflow (cfs)
Poggi Canyon @ Regional Detention Basin*	2,070	1,320	2,093 (+23)	1,115 (-205)
Wolf Canyon (from Village 2 Site only) @ Detention Site**	227	330	247 (+20)	187 (-143)
Otay River (Village 3 Site only)***	324	823	357 (+355)	375 (-448)
* Pre-Development Poggi Canyon data taken from "Master Drainage Study for Poggi Canyon Creek", dated October 1999; 30 acre diversion from grading subsequent to 1999 study preparation. ** Composite Wolf Canyon analysis to be provided at final engineering phase; 41 acre diversion to unnamed tributary from other portion of existing Wolf Canyon watershed (In other words, diversion is internal and not from out of basin effects) *** Diversion from Wolf Canyon Watershed				

Source: Hunsaker & Associates

The Hunsaker Study indicates that the runoff to Poggi Canyon will be routed through the existing Poggi Canyon Regional Detention Facility. After raising of the berm of the detention basin, calculations predict a developed-condition basin outflow of 1,115 cfs (significantly lower than the pre-developed condition flow of 1,320 cfs). Therefore, the Poggi Canyon Regional Detention Facility effectively attenuates the 100-year developed peak flow.

The majority of runoff to Wolf Canyon will be routed through a proposed detention basin located in the unnamed tributary just upstream of its confluence with Wolf Canyon Creek. This basin will serve primarily as a detention facility. However, the bottom two feet of the basin will also provide secondary water quality treatment for the area draining to the basin. Additional details regarding water quality treatment can be found in the *Water Quality Technical Report for Otay 2, 3, 4*, February 16, 2004, prepared by Hunsaker & Associates.

All runoff from Village 3 will be routed via storm drain to a basin north of the intersection of Heritage Road and Otay Valley Road. Attenuated peak flows from this detention basin will discharge into the Otay River south of Otay Valley Road. The water quality treatment will take place in a flow based treatment unit upstream of the basin. A diversion structure will direct the 85th percentile flow to unit while allowing flow in excess of this amount to proceed to the detention facility. Additional details regarding the water quality treatment of these flows can be found in the Hunsaker Report.

The Hunsaker Study analyzed 100-year impact to the Poggi Canyon detention regional detention basin. A HEC-1 detention routing analysis indicated that the Poggi Canyon regional detention basin is capable of mitigating the 100-year, 6-hour design runoff below the pre-development flow level at both the Otay Ranch - Sunbow boundary and downstream at Brandywine Avenue. Raising of the detention basin berm will provide 2 feet of freeboard within the basin.

Table K.3 below summarizes the Hunsaker Study results for the 100-year, Pre and Post Development results for the Wolf Canyon and Otay Village 3 Detention Basin.

TABLE K.3			
Summary of Peak 100-Year Flows			
Location	Pre-Developed Condition 100-Year Peak Flow (cfs)	Developed Condition 100- Year Peak Basin Inflow (cfs)	Developed Condition 100-Year Peak Basin Outflow (cfs)
Wolf Canyon Detention Basin	330	569	187
Otay Valley Road Detention Basin	823	1,165	375

Source: Hunsaker & Associates

As shown in Table K.1 above, the proposed detention facilities in Wolf Canyon and the Otay Valley Road watershed mitigate the 100-year peak flow rates below the pre-developed peak flowrates at the watershed outlet locations.

B. Storm Water Quality

Urban runoff discharged from municipal storm water conveyance systems has been identified by local, regional, and national research programs as one of the principal causes of water quality problems in most urban areas. The Municipal Storm Water Pollutant Discharge Elimination System (NPDES) Permit (Municipal Permit), issued on February 21, 2001 to the City of Chula Vista, the County of San Diego, the Port of San Diego, and 17 other cities in the region by the San Diego Regional Water Quality Control Board (SDRWQCB), requires the development and implementation of storm water regulations addressing storm water pollution issues in development planning and construction associated with private and public development projects.

The City requires that sufficient information and analysis on how the project will meet the water quality requirements shall be provided as part of the Tentative Map and/or Site Plan review process. In this manner, the type, location, cost, and maintenance characteristics of the selected BMPs will be given consideration during the project planning and design. Therefore, the City requires that prior to approval of any Tentative Map and/or Site Plan for the project, whichever occurs first, the applicant shall obtain the approval of the City Engineer of a Water Quality Technical Report containing specific information and analysis on how the project will meet the requirements of the City of Chula Vista Storm Water and Discharge Control Ordinance and the NPDES Municipal Permit (including the Final Model SUSMP for the San Diego Region).

During the construction phase, the project will be subject to the requirements of the General Construction Permit. The project will meet the requirements of the General Construction Permit by implementing a site-specific Storm Water Pollution Prevention Plan (SWPPP) and incorporating temporary best management practices (BMPs) for the control of sediment and non-visible pollutants. The site inspection requirements and site-specific Storm Water Sampling and Analysis Strategy (SWSAS) required in the SWPPP will provide recommendations for storm water testing to evaluate the effectiveness of the BMPs. Adjustments to the BMPs will be made as necessary to maintain or improve their effectiveness.

The completed project will incorporate a Post-Construction Storm Water Operation and Management Plan as a requirement for termination of coverage under the General Construction Permit. The completed project will also require treatment of runoff that occurs during the initial stage of a storm event based on the numeric sizing criteria established in the Municipal Permit adopted by the SDRWQCB on February 21, 2001. The completed project will incorporate a treatment train of non-structural and structural BMPs that may include but are not limited to: property owner education, stenciled inlets, street and parking lot sweeping, landscaping, biofilters, filtration devices, hydrodynamic separators, and/or drainage inserts to meet the applicable requirements of the General Construction Permit, the Municipal Permit, and the Model SUSMP.

Biofilters, grass swales or strips, are flow-based site design BMPs that are designed to remove sediment, heavy metals, and oil and grease from areas such as parking lots. Filtration devices are flow-based structural BMPs designed to remove the following pollutants' sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, bacteria, oil, and grease. Hydrodynamic separators are flow-based structural BMPs designed to remove sediment, trash, and debris. Drainage inserts are flow-based structural BMPs designed to remove trash and debris.

Downstream erosion or increased runoff resulting from the construction of this project is being addressed by detention basins that are proposed in Poggi Canyon, Wolf Canyon and Otay Valley Road downstream of proposed storm drain outfalls.

II.5.4.9.6 Financing Drainage Facilities

A. Onsite Facilities

City policy requires that all master planned developments provide for the conveyance of storm waters throughout the project to City engineering standards. The project will be required to construct all onsite facilities that have not yet been identified through the processing of a subdivision.

In newly developing areas east of I-805, it is the City's policy that development projects assume the burden of funding all maintenance activities associated with drainage facilities. As such, the City will enter into an agreement with the project applicant whereby maintenance of drainage facilities will be assured by one of the following funding methods:

1. A property owner's association that would raise funds through fees paid by each property owner; or
2. A Community Facilities District (CFD) established over the entire project to raise funds through the creation of a special tax for drainage maintenance purposes.

B. Offsite Facilities

Off-site drainage facilities that are necessary to support the proposed project are either constructed or are in the process of being designed and processed with the City of Chula Vista by other projects. There are no off-site drainage facilities required of the project. However, if other projects do not complete an off-site drainage facility that is necessary for this project the applicant may be required to complete the facility.

II.5.4.9.7 Threshold Compliance and Recommendations

Compliance

- A. The planned development of the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA will not adversely impact the existing natural drainage condition. The increased runoff due to the development will be mitigated by use of detention basins as identified in the *Master Drainage Study, for Otay Ranch Village 2, 3 & 4*, dated July 14, 2005, by Hunsaker & Associates.
- B. Prior to approval of the Tentative Map and/or Site Plan by the Design Review Committee, whichever occurs first, applicant shall demonstrate compliance with the City of Chula Vista Storm Water and Discharge Control Ordinance and the National Pollutant Discharge Elimination System (NPDES) Municipal Permit (including the Final Model SUSMP for the San Diego Region). The Applicant shall obtain the approval of the City Engineer of a Water Quality Technical Report that includes the following elements:
 1. Description of project characteristics, site conditions, flow patterns, pollutants emanating from the project site, and conditions of concern.
 2. Description of site design and source control BMPs considered and to be implemented.

3. Description of applicable treatment control BMPs considered and to be implemented to reduce or treat the identified pollutants. Treatment control BMPs may be selected from those post-construction BMPs analyzed in the Water Quality Report prepared by Rick Engineering or similar type of BMPs as approved by the City Engineer.
4. Justification for selection of the proposed treatment control BMP(s) including 1) targeted pollutants, justification, and alternative analysis, 2) design criteria (including calculations), 3) pollutants removal information (other than vendors specifications), and 4) literature references.
5. Site plan depicting locations of the proposed treatment control BMPs; and
6. Operation and maintenance plan for the proposed treatment control BMPs.

Recommendations

The project shall be responsible for the conveyance of storm water flows in accordance with City Engineering Standards. The City Engineering Division will review all plans to ensure compliance with such standards.

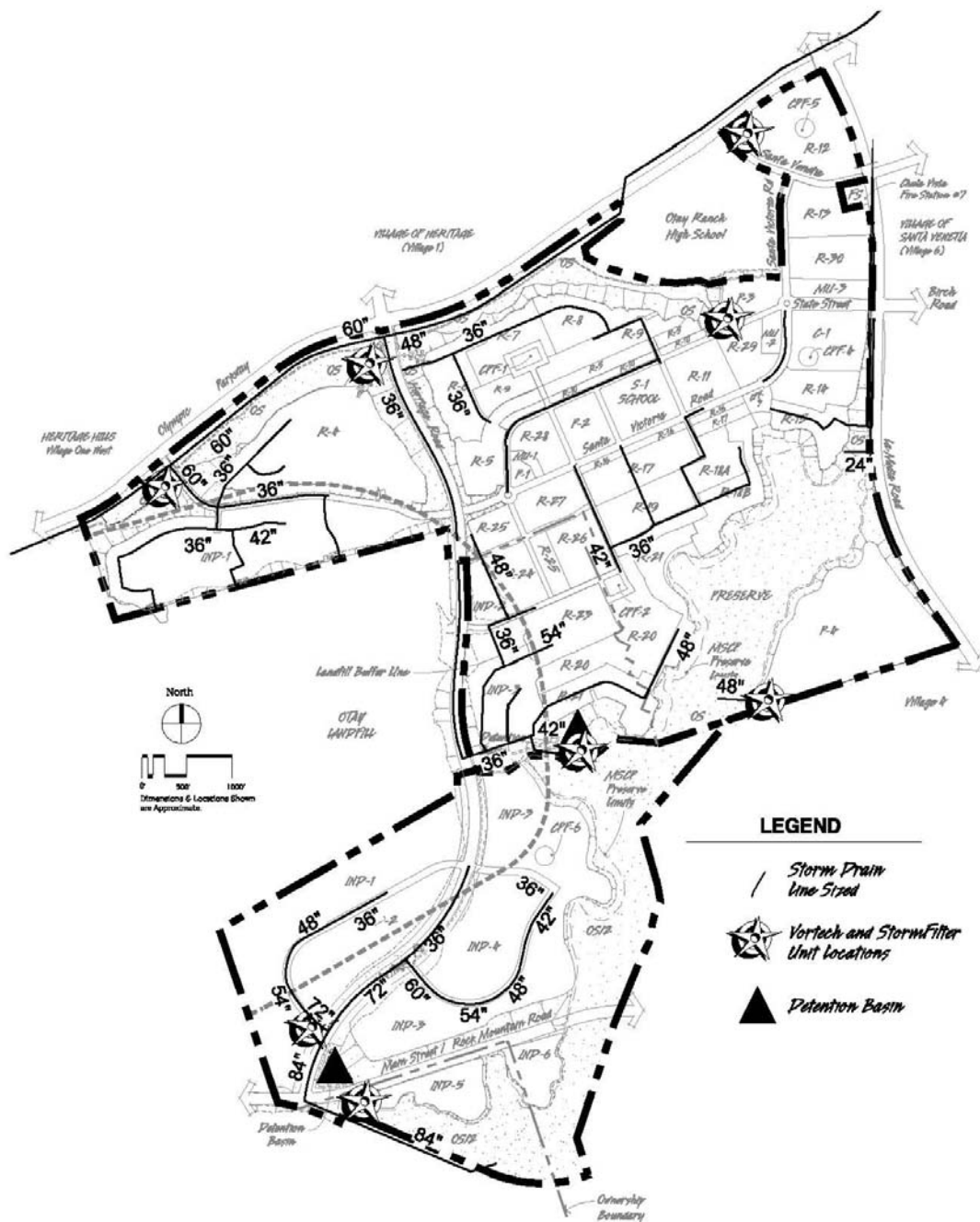
The project shall incorporate urban runoff planning in the Tentative Map.

The project shall be required to comply with all current regulations related to water quality including best management practices (BMPs) for the construction and post construction phases of the project. Both the future land development construction drawings and associated reports shall be required to include details, notes and discussions relative to the required or recommended BMPs.

The project applicant will assure the maintenance of drainage facilities-by a property owner's association that would raise funds through fees paid by each property owner and/or participation in a Community Facilities District (CFD) established over the entire project to raise funds through the creation of a special tax for drainage maintenance purposes.

Additional drainage analysis may be required at the tentative map phase of the project to demonstrate the adequacy of the proposed on-site storm drain system(s) and the existing storm drain connections.

Future drainage reports shall be prepared by the Applicant, as required by the City of Chula Vista, for the final engineering phase(s) of the project.



**Proposed Drainage Facilities
Exhibit 16**

II.5.4.10 AIR QUALITY

II.5.4.10.1 Threshold Standard

The City annually provides the San Diego Air Pollution Control District (APCD) with a 12-18 month development forecast and requests an evaluation of its impact on current and future air quality management programs, along with recent air quality data. The growth forecast and APCD response letters shall be provided to the GMOC for inclusion in its annual review.

II.5.4.10.2 Service Analysis

Air Quality Improvement Plan

The City of Chula Vista has a Growth Management Element (GME) in its General Plan. One of the stated objectives of the GME is to be proactive in its planning to meet federal and state air quality standards. This objective is incorporated into the GME's action program. Although adopted in 1989, the GME has remained current by not only requiring air pollution reduction measures identified in 1989 but also "measures developed in the future."

To implement the GME, the City Council has adopted the Growth Management Program that requires Air Quality Improvement Plans (AQIP) for major development projects (50 residential units or commercial/industrial projects with equivalent air quality impacts). Title 19 (Sec. 19.09.0508) of the Chula Vista Municipal Code requires that a SPA submittal contain an AQIP. The AQIP shall include an assessment of how the project has been designed to reduce emissions as well as identify mitigation measures.

On November 14, 2000, the City Council adopted the Carbon Dioxide (CO₂) Reduction Plan, which included implementing measures regarding transportation and energy efficient land use planning and building construction measures for new development. In this Plan, it was recognized that the City's efforts to reduce carbon dioxide emissions from new development are directly related to energy conservation and air quality efforts. As a result, the City initiated a pilot study to identify and evaluate the relative effectiveness and costs of applying various design and energy conservation features in new development projects. One of the goals of the study was to identify implementation measures that reduce air pollutants and CO₂ emissions and exceed existing mandates wherever possible including the Title 24 Energy Code. The INDEX computer model, developed by Criterion Planners/Engineers, was used in the pilot study to analyze the Otay Ranch Villages Six and Eleven projects. Twelve land use measures of the CO₂ Reduction Plan were translated into action measures for the pilot study. Those measures were:

Land Use

1. Compact Development - minimize sprawl.
2. Density - intensity of land use.
3. Diversity - mix and variety of uses.
4. Orientation toward pedestrian and bicycles.
5. Orientation toward transit.

Buildings

6. General energy design and equipment - improve efficiency.
7. Solar use - solar thermal applications and power generation.
8. Vegetation - uptakes air pollutants and greenhouse gases.

Transportation

9. Pedestrian facilities - system design and improvements.
10. Bicycle facilities - system design and improvements.
11. Transit facilities - system design and improvements.

Infrastructure

12. Water use - land planning that reduces water consumption.

The results of the pilot study are provided in The INDEX Pilot Test: SPA Air Quality Improvement Plans report prepared by Criterion Planners/Engineers. The pilot study and INDEX modeling demonstrated that the Otay Ranch village design concept results in energy-efficient features that improve air quality and reduce CO₂ emissions beyond levels that are found in traditional suburban communities. In the first modeling, Village Six was found to be about 9%, and Village Eleven to be about 11%, more efficient than traditional suburban communities. In order to increase efficiency even more, both villages volunteered to implement additional measures. These measures are described in the AQIP within this SPA Plan.

The Air Pollution Control District is responsible for the Air Quality Maintenance Program in compliance with the California Clean Air Act. There is no local Master Plan for Air Quality. The draft *Air Quality Improvement Plan for the Otay Ranch Village 2, 3, portion of Village 4 SPA* dated, January 24, 2005, was prepared by Hunsaker & Associates.

11.5.4.10.3 Threshold Compliance and Recommendations

The City continues to provide a development forecast to the APCD in conformance with the threshold standard. A separate AQIP is provided as part of this SPA Plan.

II.5.4.11. CIVIC CENTER:

II.5.4.11.1 CITY THRESHOLD STANDARDS:

There is no adopted threshold standards for these facilities. The facility information is being provided in this report to aid in establishing operational benchmarks which will determine construction phasing of the Civic Center. These facilities are funded through the collection of the DIF fees in effect at the time building permits are issued.

II.5.4.11.2 SERVICE ANALYSIS:

Although the existing Civic Center successfully accommodated city administration offices prior to the mid-1980's population growth, increase in City staff to meet new demands of growth has caused increasing congestion problems. City staff in the Public Services Building experience space shortages, lack of privacy and storage, and frequent noise distractions. This was reported in a survey, which is included in the Civic Center Master Plan dated May 8, 1989. Site Alternative Three "The Suburban Scheme" was selected from the master plan at a City Council conference on June 22, 1989.

II.5.4.11.3 EXISTING CONDITIONS:

In July of 2001, the final master plan for the renovations to the Civic Center was approved by City Council. Rebuilding the Civic Center will cost approximately \$50 million, which will primarily be funded by development fees (89%). The Civic Center Redevelopment is currently underway and expected to be completed in three phases by 2009.

Recently, the new City Hall Redevelopment, or Phase One of the Civic Center Complex, was completed. Phase Two is the gutting and remodeling of the old Police Station for additional offices. Phase Two is currently in process and will be the temporary home of the Planning, Building and Engineering Departments. Phase Three is the re-building of the Public Services Building to be completed by 2008. The fire station will be rebuilt in 2009 with the Ken Lee Bldg and parking lot to be the parking for the complex.

II.5.4.11.4 ADEQUACY ANALYSIS:

The need for the Civic Center cannot be easily related to population figures or acres of commercial and industrial land, which will be developed in the future. The original facilities, according to the master plan, are inadequate because of the lack of space. This has worsened as employee numbers and their workloads have increased in response to demands for services, which have been generated by new development. Expansion of the Civic Center Complex is currently underway. This expansion included space planning, design, and construction is expected to keep pace with demand for additional work space. City Hall facilities have been renovated and now include a new state of the art Council Chambers. Consistent with the Master Plan, further expansions and renovations include a conversion of the old Police Station to additional office space and re-building of the Public Services Building.

II.5.4.11.5 FINANCING CIVIC CENTER FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is \$5,489/unit, multi-family residential is \$5,109/unit, commercial (including office) development is \$21,727/acre and industrial development is \$4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report.

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Civic Center Fee obligation at buildout is \$3,446,397 (see Table L.3).

Table L.3 Villages 2, 3, and a Portion of Village 4 SPA Public Facilities Fees For Civic Center									
Phase	Dwelling Units		Com'l Acres	Ind. Acres	Civic Center Fee				
	SF	MF			Single Family \$1,223/DU	Multi-Family \$1,096/DU	Com'l \$4,767/Ac.	Ind. \$798/Ac	Total Fee
Blue	160	0	0.0	0.0	\$195,680	\$0	\$0	\$0	\$195,680
Red	258	459	0.0	0.0	\$315,534	\$503,064	\$0	\$0	\$818,598
Yellow	327	185	0.0	0.0	\$399,921	\$202,760	\$0	\$0	\$602,681
Green	196	193	0.0	0.0	\$239,708	\$211,528	\$0	\$0	\$451,236
Orange	0	624	0.0	0.0	\$0	\$683,904	\$0	\$0	\$683,904
Purple	45	339	11.9	0.0	\$55,035	\$371,544	\$56,727	\$0	\$483,306
Teal	0	0	0.0	87.9	\$0	\$0	\$0	\$70,144	\$70,144
Pink	0	0	0.0	0.0	\$0	\$0	\$0	\$0	\$0
Pink	0	0	0.0	80.9	\$0	\$0	\$0	\$64,558	\$64,558
Brown	0	0	0.0	95.6	\$0	\$0	\$0	\$76,289	\$76,289
Subtotal	986	1800	11.9	264.4	\$1,205,878	\$1,972,800	\$56,727	\$210,991	\$3,446,397
Total	2786		11.9	264.4	\$1,205,878	\$1,972,800	\$56,727	\$210,991	\$3,446,397

Table L.3 is only an estimate. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

II.5.4.11.6 THRESHOLD COMPLIANCE AND RECOMMENDATIONS:

Civic Center facilities will be funded through the collection of the public facilities fees at the rate in effect at the time building permits are issued.

II.5.4.12 CORPORATION YARD

II.5.4.12.1 THRESHOLD STANDARDS:

There is no adopted threshold standard for this facility. The facility information is being provided in this report to aid the City in establishing operational benchmarks which will determine construction phasing of the corporation yard.

II.5.4.12.2 SERVICE ANALYSIS:

New development, with its resultant increase in required maintenance services, creates a need for a larger corporation yard. The new 25-acre Corporate Yard is located at 1800 Maxwell Road.

II.5.4.12.3 EXISTING CONDITIONS:

The new Corporate Yard Facility was previously an SDG&E equipment and repair facility. The city has renovated and added new improvements for the maintenance and repair of city owned equipment. This facility consists of a renovated building that serves as the administration building for the Corporate Yard. Existing shop buildings have been renovated and new shops have been added as well as a new maintenance building. The Corporate Yard includes parking for employees, city vehicles and equipment. In addition, a Bus Wash/Fuel Island/CNG and associated equipment have been added.

II.5.4.12.4 ADEQUACY ANALYSIS:

The need for a Corporate Yard cannot be easily related to population figures or acres of commercial and industrial land which will be developed in the future. The growth in population, increase in street miles and the expansion of developed areas in Chula Vista, requires more equipment for maintenance as well as more space for storage and the administration of increased numbers of employees. The need for a larger Corporation Yard has been specifically related to new development.

II.5.4.12.5. FINANCING CORPORATE YARD FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is \$5,489/unit, multi-family residential is \$5,109/unit, commercial (including office) development is \$21,727/acre and industrial development is \$4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report.

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Corporate Yard Fee obligation at buildout is \$1,936,230 (see Table M.1).

Table M.1 Villages 2, 3, Portion of Village 4 SPA Public Facilities Fees For Corporate Yard³⁷									
Phase	Dwelling Units		Com'l Acres	Ind. Acres	Civic Center Fee				
	SF	MF			Single Family \$717/DU	Multi-Family \$479/DU	Com'l \$3,318/Ac.	Ind. \$1,383/Ac	Total Fee
Blue	160	0	0.0	0.0	\$114,720	\$0	\$0	\$0	\$114,720
Red	258	459	0.0	0.0	\$184,986	\$219,861	\$0	\$0	\$404,847
Yellow	327	185	0.0	0.0	\$234,459	\$88,615	\$0	\$0	\$323,074
Green	196	193	0.0	0.0	\$140,532	\$92,447	\$0	\$0	\$232,979
Orange	0	624	0.0	0.0	\$0	\$298,896	\$0	\$0	\$298,896
Purple	45	339	11.9	0.0	\$0	\$162,381	\$39,484	\$0	\$201,865
Teal	0	0	0.0	87.9	\$0	0	\$0	\$119,632	\$119,632
White	0	0	0.0	0.0	\$0	0	\$0	\$0	\$0
Pink	0	0	0.0	80.9	\$0	0	\$0	\$110,105	\$110,105
Brown	0	0	0.0	95.6	\$0	0	\$0	\$130,112	\$130,112
Subtotal	986	1800	11.9	264.4	\$674,697	\$862,200	\$39,484	\$359,848	\$1,936,230
Total	2786		11.9	264.4	\$674,697	\$862,200	\$39,484	\$359,848	\$1,936,230

Table M.1 is only an estimate. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

5.3.12.6. THRESHOLD COMPLIANCE:

Corporate Yard facilities will be funded through the collection of the public facilities fees at the rate in effect at the time building permits are issued.

³⁷ The PDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

5.3.13. OTHER PUBLIC FACILITIES

5.3.13.1. THRESHOLD STANDARD:

There is no adopted threshold standard for these facilities which are part of the Public; Facilities Development Impact Fee Program and include GIS, Mainframe Computer, Telephone System Upgrade, Records Management and Administration. The information regarding these capital items is being provided in this section of the PFFP to aid the City and the Developer in calculating the PFDIF fees to be paid by the project.

5.3.13.2. SERVICE ANALYSIS:

The public facilities identified above are described in the report entitled *Development Impact Fee for Public Facilities* dated April 20, 1993, known as document number C093-075.

5.3.14.3. EXISTING CONDITIONS:

The City continues to collect funds from building permit issuance in the Eastern Territories for deposit to the accounts associated with other public facilities. These facilities include administration, records management system, telecommunications, computer systems and GIS.

5.3.14.4. FINANCING OTHER PUBLIC FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is \$5,489/unit, multi-family residential is \$5,109/unit, commercial (including office) development is \$21,727/acre and industrial development is \$4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report.

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Other Public Facilities Fee obligations at buildout is \$501,620 (see Table N.1).

Table N.1 Villages 2, 3, and a Portion of Village 4 SPA Public Facilities Fees For Other Public Facilities³⁸									
Phase	Dwelling Units		Com'l Acres	Industrial Acres	Other Public Facilities Fees				
	SF	MF			Single Family \$179/DU	Multi-Family \$160/DU	Com'l \$698/Ac.	Ind. \$109/Ac	Total Fee
Blue	160	0	0	0	\$28,640	\$0	\$0	\$0	\$28,640
Red	258	459	0	0	\$46,182	\$73,440	\$0	\$0	\$119,622
Yellow	327	185	0	0	\$58,533	\$29,600	\$0	\$0	\$88,133
Green	196	193	0	0	\$35,084	\$30,880	\$0	\$0	\$65,964
Orange	0	624	0	0	\$0	\$99,840	\$0	\$0	\$99,840
Purple	45	339	11.9	0	\$8,055	\$54,240	\$8,306	\$0	\$70,601
Teal	0	0	0	87.9	\$0	\$0	\$0	\$9,581	\$9,581
White	0	0	0	0.0	\$0	\$0	\$0	\$0	\$0
Pink	0	0	0	80.9	\$0	\$0	\$0	\$8,818	\$8,818
Brown	0	0	0	95.6	\$0	\$0	\$0	\$10,420	\$10,420
Subtotal	986	1800	11.9	264.4	\$176,494	\$288,000	\$8,306	\$28,820	\$501,620
Total	2786		11.9	264.4	\$176,494	\$288,000	\$8,306	\$28,820	\$501,620

Table N.1, is only an estimate. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change the number of residential units, residential densities, industrial acreage or commercial acreages.

5.3.14.5 THRESHOLD COMPLIANCE AND RECOMMENDATIONS:

Other Public Facilities will be funded through the Collection of public facility fees at the rate in effect at the time building permits are issued.

³⁸ The PDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

II.5.4.14 FISCAL ANALYSIS

II.5.4.14.1 Threshold Standard

1. The GMOC shall be provided with an annual fiscal impact report, which provides an evaluation of the impacts of growth on the City, both in terms of operations and capital improvements. This report should evaluate actual growth over the previous 12-month period, as well as projected growth over the next 12-18 month period, and 3-5 year period.
2. The GMOC shall be provided with an annual “economic monitoring report” which provides an analysis of development impact fees collected and expended over the previous 12-month period.

II.5.4.14.2 Facility Master Plan

There is no existing Master Plan for fiscal issues. However, an economic base study and a long range fiscal impact study was prepared by P&D Technologies as part of the Chula Vista General Plan.

II.5.4.14.3 Project Processing Requirements

The SPA Plan and the PFFP are required by the Growth Management Program to prepare a phased fiscal/economic report dealing with revenue vs expenditures including maintenance and operations.

II.5.4.14.4 Fiscal Analysis of Project

II.5.4.14.4.1 Introduction

This section of the PFFP is based upon the Fiscal Impact Analysis as prepared by CIC Research, Inc. dated March 2005. The CIC analysis identifies the estimated fiscal impact that the project will have on the operation and maintenance budgets of the City of Chula Vista (general fund). Information pertaining to the scope of development was derived from the developer and the City.

Two basic methodologies were utilized in estimating public agency revenues and expenditures; the case study and per unit/acre multiplier methods. The case study method was used to estimate secured property tax. The case study method is based on specific characteristics of the project from which revenues can be estimated. Appropriate city officials were contacted to identify actual tax rates, fees and costs. The per unit/acre multiplier method, which represents a more general approach was utilized to estimate unsecured property tax, sales tax, TOT, property transfer tax, utility tax, license fees, fines, other revenues and fees and all expenditures. CIC also utilized input from the fiscal impact prepared for Eastlake III, Eastlake Trails, Otay Ranch Village 6, and San Miguel Ranch. The City of Chula Vista's FY 2003 Budget was utilized to estimate per unit/acre multipliers.

II.5.4.14.4.2 Project Description

The project is proposed to be developed in the City of Chula Vista and includes approximately 982 single-family units, 1,804 multi-family (including multi-use residential), 260 acres of industrial, 20 acres of retail uses, and 59.6 acres of publicly maintained park at build-out. This fiscal analysis is based on that project scenario. Any alternative project scenarios, additions and/or changes would require further analysis and revisions to this fiscal impact analysis report. Presented in Table O.1 is a description of the product types and projected absorption schedule, both provided by the City and the developer. This schedule includes a 13-year (2005 to 2018) development schedule. For the purpose of this analysis, absorption represents new units being sold and occupied, and commercial and industrial land developed sold and occupied.

Housing market values were estimated by CIC and ranged from approximately \$300,000 (multi-family) to \$400,000 (single family). The values used in the table represent the estimated average unit price for each type of development. Commercial values were estimated using COMPs (Commercial Property Information Services), DataQuick and previous studies.

II.5.4.14.4.3 Project Demographics and Land Uses

In developing per unit/acre multipliers, CIC utilized demographic and land use information related to the City of Chula Vista as a whole and, more specifically, the subject project. Included in Table O.2 are population, housing, land-use and infrastructure characteristics. The developer (Otay Ranch Company) provided the number of housing units and acres by land use for the project. In addition, they provided the number of street miles. Lane miles were estimated using the city average. The number of streetlights also represents an estimate and was derived by using the City standard of 350 feet between streetlights.

Table O.1 Otay Ranch Village 2, 3, Portion of Village 4 SPA Absorption Schedule and Market Values by Land Use																
Land Use	Net Unit Value (000's)	Cumulative Developed and Occupied Net Acres														
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
SF	\$400	150	300	450	600	750	900	986	986	986	986	986	986	986	986	986
MF	\$300	275	550	825	1,100	1,375	1,650	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Total Res. Units		425	850	1,275	1,700	2,125	2,550	2,786	2,786	2,786	2,786	2,786	2,786	2,786	2,786	2,786
Ind. Acreage	\$2,000	20	40	60	80	100	120	140	160	180	200	220	240	260	264	264
Com'l Acreage	\$2,000			7	14	20	20	20	20	20	20	20	20	20	20	20

Source: CIC Research

Table O.2 Project Fiscal Impact General Assumptions		
Chula Vista		Sources
Population	217,543	CV Planning
Occupied Housing Units	62,500	CA Dept. of Finance
Persons Per Household	3.03	CA Dept. of Finance
Street Miles	365	CV Public Works
Lane Miles	1351	CV Public Works
Traffic Signals	142	CV Engineering
Street Lights	6,307	CV Engineering
Estimated Avg. HH Income	\$55,992	Claritas, Inc.
Median Housing Price	\$197,000	DataQuick Info.Serv.
Land Uses (Developed Acres)		
Commercial	1,404.41	CV Planning
Industrial	728.29	CV Planning
Residential	8,226.81	CV Planning
Park	401.18	CV Planning
Village 2, 3 and portion of Village 4 SPA Project		
Estimated Population	8,458	CIC Research, Inc
Housing Units	2,786	Otay Ranch Co.
Persons Per Household	3.036	CV Planning
Commercial Retail Acres	11.9	Otay Ranch Co.
Public Park Acres (including a portion of community park)	59.6	Otay Ranch Co.
Street Miles	15	Otay Ranch Co./ CIC Research, Inc.
Lane Miles	48	CIC Research, Inc
Street lights	226	CIC Research, Inc
Estimated Avg. HH Income	\$75,000	CIC Research, Inc
Median Housing Price	\$300,000	CIC Research, Inc

Source: CIC Research

II.5.4.14.4.4 Revenues

Operating revenues for the City of Chula Vista resulting from the development of the proposed project are estimated in this section. The major revenue sources which are expected to be generated from the subject developments and detailed in this chapter include property tax (secured and unsecured), property transfer tax, sales tax, franchise fees, TOT, utility tax, license revenue, miscellaneous fines, homeowner's property tax relief, gas tax and charges for various current services. The City of Chula Vista's Budget (FY 2003) for these revenue items is detailed in Table O.3 along with allocation rates. The following section details each of the revenue sources and the methodology employed to estimate revenues from the subject developments. For each identified revenue source, a detailed table reflecting the revenue flow over the project build-out (2004 to 2011) is presented in the Appendix of this report. All dollar figures are presented in 2004 dollars (no inflation rates were used).

Table O.3
Project Fiscal Impact
Revenue Generation Assumptions

Revenues	City of Chula Vista FY2003 Revenues	Allocation Assumption
Property Taxes		
Secured	\$13,504,354	Based on 10.6% of 1% of TAV
Unsecured	\$655,000	\$312/acre industrial, \$301/acre commercial
Other Taxes		
Property Transfer Tax	\$963,000	\$0.18 annual ave. per \$1,000 assessed value
Sales & Use Tax	\$20,353,998	\$234/residential unit, \$3,354/acre industrial, \$3,570/acre commercial
Franchise Fees	\$6,935,040	\$41/residential unit, \$2,523/acre industrial, \$1,802/acre commercial
TOT	\$2,173,500	\$3/residential unit, \$134/acre industrial, \$70/acre commercial
Utility Tax	\$4,170,600	\$25 per residential unit, \$1,518/acre industrial, \$1,084 /acre commercial
Licenses		
Business License	\$1,057,417	\$319/acre industrial, \$587/acre commercial
Other Licenses	\$96,614	\$1.50 per residential unit
Fines		
Library Fines	\$170,000	\$2.72 per residential unit
Parking Citations	\$312,995	\$3.76 per residential unit, \$26/acre industrial, \$42/acre commercial
Revenues from other Agencies		
Gas Tax	\$2,559,533	\$36 per residential unit, \$105/acre industrial, \$173/acre commercial

Source: CIC Research

Secured Property Tax

Secured property tax revenues generated from the proposed developments were calculated on the basis of a one-percent tax rate on the current market value of the residential, industrial, and commercial development. The subject properties are in tax rate areas 0162. According to the County of San Diego, the City of Chula Vista would receive 10.6 percent of the one-percent of the property taxes collected in those tax rate areas. It should be noted that the citywide average share of property tax is roughly 14.7 percent.

Market values (assessed values) for the residential units were estimated by CIC Research using market data from DataQuick. Market values for commercial and industrial uses were estimated using COMPS, Commercial Property Information Services, Inc., as well as DataQuick and other published materials. These identified market values also represent the assessed values. Although assessed values increase two percent per year and readjust after the property resells, this analysis assumes no inflation and all values remain in 2004 dollars. Included in Tables A-2 in the appendix is the cumulative assessed value over the

build-out of the developments. Total assessed values for the Project range from \$182 million during the first year (2005) to \$1.5 billion at build-out (2018).

The City of Chula Vista's share of the collected annual property tax is \$1.6 million for the project (Table A-3 of the Fiscal Impact Analysis Tables starting on page 159) at build-out.

Unsecured Property Tax

Unsecured property, which includes personal property such as equipment, inventory, furniture, etc. is taxed for primarily commercial and industrial businesses. CIC utilized the County Assessor's Office estimate of unsecured tax allocation. The County Assessor estimates 65 percent of the unsecured property tax is associated with commercial development and 25 percent is allocated to industrial development. Using the City's budget figure of \$650,000 (unsecured tax collect-FY 2003) and an estimated 1,404 acres of commercial development and 728 acres of industrial results in a ratio of \$312 per industrial and \$301 per commercial acre for the City's share of unsecured property tax.

The study portion of the Project includes 274.6 acres of industrial and roughly 11.9 acres of commercial uses. This would generate an estimated \$88,400 in unsecured annual property tax at build-out (refer to Table A-4 in the appendix).

Property Transfer Tax

Sales of real property in San Diego County are taxed at a rate of \$1.10 per \$1,000 of the sales price. Chula Vista would receive 50 percent of the tax. An analysis conducted by the San Diego Association of Governments (SANDAG) indicates that the average turnover rate for residential property is once every seven years and once every 14 years for nonresidential property. The following formulas, which take both the transfer tax formula and the average turnover rate into account, were utilized to yield average annual per unit property transfer tax.

$$\begin{array}{l} \text{Single Family Residential} \quad \underline{\$.55} \quad \times \quad 1/7 = .00007857 \\ \$1,000 \end{array}$$

$$\begin{array}{l} \text{Commercial/Industrial} \quad \underline{\$.55} \quad \times \quad 1/14 = .00003929 \\ \$1,000 \end{array}$$

Using these formulas, an estimated annual average property tax can be calculated. The project would generate \$96,000 (refer to Table A-5) in average, annual property transfer tax at build-out.

Sales Tax

This fiscal impact methodology equates the collection of sales tax to both residential units and commercial and industrial acreage primarily using a demand allocation method. After subtracting the portion of the City's sale tax that represents Mexican and other non-resident shoppers (this is estimated to be 20% based on City of Chula Vista data). The remainder is allocated to local residents and businesses based on an analysis conducted by the City of San Diego's Finance Department and given the study site location and land-use mix, CIC utilized the following tax allocations, 75% for residential, 10% for retail/office commercial, and the remainder (15%) allocated to industrial land uses. The City's share of sales tax generated by the residential portion of the study property is based on \$234 per household per year. This is derived by using 75 percent of the total sales tax collection in the City of Chula Vista, divided by the number of housing units and adjusted roughly 10 percent to

reflect the assumed higher household income in the new development versus the overall City average based on the housing cost differential. Retail sales taxes for commercial land was based on 10% of the City's sales tax divided by commercial acreage and an estimate of additional sales tax generated from the new commercial (conservatively estimated to be approximately 21 cents a square foot of retail sales space). The total of both of those which resulted in a multiplier of \$3,570 per acre of retail commercial. Sales tax allocated to industrial land uses amount to \$3,354 per acre based on the previous mentioned formula. Total annual sales tax generated by the Project is estimated at \$1.6 million at build-out (refer to Table A-6 in the appendix).

Franchise Fees

The City of Chula Vista receives a franchise tax fee from sales of natural gas, electricity, cable television and trash collection. Using the sale of gas and electricity as a guideline and based on a study prepared by San Diego Gas and Electric (SDG&E), 37 percent of the franchise fees are attributed to residential uses, 36.5 percent to retail/office uses and the remaining 26.5 percent is attributed to industrial uses. Using these guidelines, the city budget, area demographics and land use information results in an estimated \$41 in annual franchise fees per housing unit, \$2,523 per developed industrial acre and \$1,802 per developed commercial acre. Utilizing these ratios results in a total annual franchise fee of \$161,100 for the Project (see Table A-7) at build-out.

Transient Occupancy Tax

Transient occupancy tax (TOT) is a tax added to the price charged for the use of a hotel or motel room. The majority of the tax is associated with new hotel developments. Since there is no planned hotel/motel development in this project, TOT would be generated by the residents and commercial retail enterprises by their use of local hotels/motels. The San Diego Convention and Visitors Bureau estimates that of all visitors who stay in hotels and motels, eight percent are visiting friends or relatives and an additional nine-percent are in San Diego on non-convention business. Utilizing the City's 2000/01 budget for TOT of \$2,064,000 and assuming eight percent is generated by residential land uses and nine percent by non-residential uses (assume 50% retail and 50% industrial uses), results in multiplier ratios of roughly \$3 per housing unit, \$134 per industrial acre, and \$70 per commercial acre. Using these ratios and the estimate of TOT generated by the tourist commercial, the City of Chula Vista will receive a total annual TOT tax of \$45,100 associated with the Project (refer to Table A-8).

Utility Users' Tax

The City of Chula Vista's FY2002/03 budget for utility taxes is \$3,170,600. These taxes are paid by the residents on gas, electric and telephone services. CIC utilized the same methodology for utility taxes and franchise fees. Using the land use allocation of 79 percent residential uses, 14 percent to retail/office uses and 7 percent to industrial uses, results in an estimated \$25 in annual utility tax per housing unit, \$1,518 per developed Industrial acre, and \$1,084 per developed commercial acre. These ratios result in a total annual utility tax of \$377,500 for the Project (refer to Table A-9) at build-out.

Business License Fees

Business license fees are allocated based on a survey reported by the City of San Diego's Financial Management Department, which indicated that 78 percent of the fees were generated by commercial uses and 22 percent were generated by industrial uses. Using the City of Chula Vista's budget (\$1,057,417), the above proportions and the number of citywide developed commercial acres, results in multipliers of \$319 per industrial and \$587

per commercial acre. Using these multipliers, total business license fees attributed to Project are \$166,700 per year at build-out (refer to Table A-10).

Miscellaneous Revenues

CIC grouped numerous revenues into the category of miscellaneous. These revenues include: animal licenses, bicycle licenses, State homeowners property tax relief, gas tax, library fines, parking citations, swimming pool fees, recreation programs and park reservation fees. With the exception of gas tax and parking citations, all the revenues are assumed to be allocated entirely to residential uses. For these revenues, multipliers were developed by dividing the total revenues by the total number of citywide occupied housing units, commercial and industrial acreage. Total miscellaneous revenues attributed to the Project are \$213,200 per year at build-out (refer to Table A-11). The allocation of gas tax and parking citations was calculated as follows:

Gasoline Tax

Gasoline tax revenue accrues on the basis of a complicated formula utilizing county to state and incorporated to unincorporated portion of population. According to the City of San Diego's "Fiscal Impact of New Development" and the Department of Motor Vehicle's auto registration records, an estimated 50 percent is attributed to residential uses and the remaining 50 percent is allocated based on vehicle registration (75% residential, 19% commercial and 6% industrial).

Parking Citations

Parking violation revenues were allocated by vehicle registration classification as estimated by the Department of Motor Vehicles (75% residential, 19% commercial and 6% industrial).

II.5.4.14.4.5 Operating Expenditures

Operating expenditures for the City of Chula Vista resulting from development of the Project are outlined in this section. The expenditure categories to be impacted by the subject developments include administration overhead, planning, police, fire, library, public works and parks and recreation. The City of Chula Vista's operating expenditure budgets for fiscal year 2000/01 and allocation assumptions are presented in Table O.4. These expenses are utilized in estimating per unit/acre expenditures for the project. The methodologies used to estimate project expenses are discussed in more detail in the following sections. Similar to the revenue analysis, all figures shown are in current (2004) dollars. The projection of costs in this analysis assumes no significant or predictable changes in the service standards of the City of Chula Vista. Detailed tables reflecting the annual expenditure cash flows are presented in the appendix to this report.

Table O.4
Project Fiscal Impact
Cost Allocation Assumptions

Expenditures	City of Chula Vista FY2002/03 Expenditures	Allocation Assumptions
OVERHEAD FUNCTIONS		
Administration Overhead	\$19,277,325	
City Council	\$757,019	
Boards and Commission	\$10,210	
City Attorney	\$1,653,273	
City Clerk	\$657,312	
Admin	\$5,446,562	
Management	\$2,906,257	
Human Resources	\$3,440,094	
Finance	\$2,256,166	
Non-Dept	\$2,150,432	
Public Works	\$2,804,320	
Building Maintenance	\$1,075,019	
Custodial Maintenance	\$1,351,112	
Communications	\$378,189	
TOTAL OVERHEAD	\$22,081,645	Based on 26.2% of Line Operations
LINE OPERATIONS		
Planning (non current)	\$1,750,367	\$22/residential unit, \$169/acre commercial and industrial
Community Development	\$2,408,520	N/A
Police	\$32,580,130	\$381/residential unit, \$1,819/acre industrial, \$5,319/acre commercial
Fire	\$10,271,309	\$164/residential unit, \$573/acre industrial, \$1,677/acre commercial
Building and Housing	\$1,042,580	N/A-Cost Reimburse
Library	\$7,395,347	\$118 per residential unit

Table O.4 continued Project Fiscal Impact Cost Allocation Assumptions		
Expenditures	City of Chula Vista FY2002/03 Expenditures	Allocation Assumptions
OPERATIONS		
Public Works	\$17,960,124	
Operations		
Operations Administration	\$1,656,815	\$24/residential unit, \$180/acre commercial and residential
Traffic Operations	\$801,733	\$593 per lane mile
Street Maint (1)	\$1,767,339	\$1308 per lane mile
Street Sweeping	\$295,968	\$200 per lane mile
Street Tree Maint	\$859,876	\$2,356 per street mile
Wastewater Maint.	\$3,717,689	Self supporting
Engineering		
Traffic Sign/Lights Maint.	\$1,432,797	\$4,036 per signal, \$136 per street light
Parks	\$7,783,023	\$2,296 per park acre
Admin-Parks	\$315,164	
Admin-Open Space	\$480,646	Provided by lighting/landscape district
Maintenance	\$3,202,441	
Recreation	\$3,784,772	\$54 per residential unit
Aquatics & Athletics	\$911,781	
Senior and Youth	\$372,094	
General Recreation	\$2,976,142	
Administration	\$524,754	
TOTAL LINE OPERATIONS(3)	\$84,976,172	
TOTAL EXPENDITURES	\$102,415,863	
(1) Estimated at 20% in year 5, 40% in year 6, to 100% in year 9. (2) Slurry seal will occur after 3 years then every 7 years (residential streets), chip seal after 3 years then every 7 (major streets). (3) Includes all planning expenses and all public works reimbursable and CIP. (4) Includes all planning expenses and all public works admin.		

Source: CIC Research

Government Administration

The total costs for city administration services projected in FY 2002/2003 are \$22,081,645 , as shown in Table O.4. In order to allocate these overhead expenses to the projects, CIC assumed the City cost for the subject developments would incur an overhead rate similar to the City of Chula Vista (city administration overhead ÷ total line operations expenditures=26.2%). Table A-12 in the appendix shows annual overhead expenditures for the Project (\$830,500) at build-out.

Planning (Non-Current)

Non-current planning costs are allocated based on the City of Chula Vista's land use allocation (79% residential, 7% residential and 14% commercial/office) and the number of housing units in the city and developed commercial and industrial acreage. Utilizing these proportions results in multipliers of \$22 per housing unit, \$169 per commercial and industrial acre. These multipliers translate into annual planning (non-current) costs of \$109,900 for the Project (refer to Table A-13).

Police

The Chula Vista Police Department will provide police protection for the projects. CIC contacted representatives of the local police department to obtain information on service calls and beat activity attributable to residential, business and industrial land uses. No information was available regarding the nature of local calls and regular beat activity. As a result, CIC utilized City of San Diego's cost allocation by land use from the City of San Diego's "Fiscal Impact Model of New Development".

The San Diego Police Department estimates that calls for service account for roughly 50 percent of their expenditures. They are distributed as follows: 66.6% in or around residential structures, 32.3% in or around commercial structures and 1.1% associated with industrial structures. The other 50 percent of expenditures are attributed to normal "beat" activity, and are allocated in proportion to land use acreage (79% to residential land use, 7% to industrial land use, and 14% to commercial land use). Averaging the percentages for both service-call activity and "beat" activity yields the following per unit allocations for police service in Chula Vista (see Table O.5).

Table O.5		
Per Unit Allocations for Police Service		
Land Use	Combined Percent of Budget Allocation	Estimated Per Unit Expenditures
Residential	73%	\$381/housing unit
Industrial	4%	\$1,819/acre
Commercial/Office	23%	\$5,319/acre

Source: CIC Research

The above estimates are based upon a FY 2003 police budget of \$33 million and results in annual police costs of \$1,646,700 for Project (refer to Table A-14) at build-out.

Fire Protection

As previously mentioned, Project includes a moderate amount of open space. Fire protection for the open space will be provided by the Chula Vista Fire Department. According to the Chula Vista Fire Department, the City experiences very few brush fires compared to other service calls. However, the potential for a large brush fire does exist and the City could incur extra costs, which are not covered in the State Master Mutual-Aid Agreement.

The proposed urban uses form the basis for allocating fire costs to the Project. The Chula Vista Fire Department also provided CIC with a breakdown of calls for fire protection service in 1997; residential uses 84.2%, commercial uses 14.3% and industrial uses 1.5%. Based on these allocations for fire protection service, the following per unit costs were developed for the project, which results in annual fire protection costs of \$642,700 for the

Project (refer to Table A-15). It should be noted that these costs do not include any extraordinary expenses for large brush fires.

Paramedic Services

The City of Chula Vista contracts privately with American Medical Response Group to provide paramedic services. Services are charged on a fee for service basis, at no resulting cost to the City. Therefore, the project will not incur any current paramedic expenses and no expense category is shown in the expenditure cash flow analysis for this service. It should be noted that at some future time, the City could be asked to help fund costs associated with a new paramedic unit to handle future eastern growth.

Library Services

For past studies, CIC Research contacted the Chula Vista Library's Director, Mr. David Palmer regarding allocations by land use for new development's impact on library services. He was able to provide CIC with a breakdown of resident versus nonresident patronage. In fiscal year 1996/1997, 37 percent of local library use (three branches) was by nonresidents of the community. Alternatively, 63 percent of library use was by residents. Since the library is primarily a local resource used by residents as opposed to businesses, the entire budget is allocated to residential uses.

In the FY 2003 proposed budget, total library costs are estimated at \$7,395,347, which calculates to a multiplier of \$118 per housing unit. Total annual library costs associated with the Project are \$329,700 (refer to Table A-16) at build-out.

Public Works

The Public Works Department has a proposed FY 2003 budget of \$17,530,000 (this figure excludes some overhead costs, which were included in overhead functions). The Public Works Department is divided into operations and engineering. Mr. David Byers (Deputy Director of Public Works/Operations) assisted CIC in allocating operation costs for a previous study. Building maintenance, custodial maintenance and communications were included in City overhead functions. Operations' administration costs were allocated based on developed acreage proportions and housing units. The other operation costs were allocated on a per street or lane mile basis. As presented in Table O.2, the City of Chula Vista includes 365 street miles and 1,351 lane miles. The Project is estimated to include 15 street miles and 48 lane miles at build-out. Approximately 33% of the lane miles would be on major roads while the remainder would be residential. Per Mr. Byers' suggestion, CIC included three (Overlay Program, Sidewalk Maint. and Pavement Rehab.) expenditure categories which represent operating costs but were included in CIP programs. Pavement rehabilitation costs were based on \$.07 per square foot for slurry seal and \$.12 per square foot for chip seal and allocated to the lane miles in the proposed projects. All of the operation costs begin in year one with the exception of street maintenance (begins in year 5 at 20% and adds 20% each year to year 9), slurry seal and chip seal (begin in year 3 and then every 7 years). Slurry seal costs were allocated to residential streets and chip seal costs were applied to the heavy traffic, major streets.

Mr. Cliff Swanson (Deputy Director of Public Works/City Engineering) assisted CIC in allocating public works engineering costs for a previous study. Numerous engineering costs are entirely or partially self funded with fees. The entire engineering administration and a portion of construction inspection and GIS costs were allocated based on citywide land-use acres and housing units. Traffic signal and street light operations and maintenance costs were allocated based on the number of citywide signals and street lights (142 signals

and 6,307 street lights) and estimated project signals and lights (0 signals and 226 street lights). The estimated numbers of streetlights in the projects were calculated based on the City standard of one light per 350 feet.

Using the identified ratios and multipliers result in a total annual public works cost of \$204,300 for the Project at build-out (refer to Table A-17). Because of the length of the presented building schedule, these figures include average annual (15 year) estimates for street maintenance, slurry seal and chip seal costs, which occur infrequently or are phased in, as is the case with street maintenance. Because these street maintenance costs will occur infrequently or possibly be delayed depending on conditions, the public works cost will be less in some years and more in other years.

Parks and Recreation Services

The City of Chula Vista's FY 2003 proposed park and recreation budget is \$5,644,290. CIC Research contacted Mr. Jerry Foncerrada with the Chula Vista Parks and Recreation Department for a previous study. He indicated that close to 100 percent of the department's expenditures go towards the local residential community. The public works department handles the maintenance of city parks and provided park maintenance costs of \$2,296 per public park acre. CIC allocated the park cost on a per acre (1,708 citywide and 37.5 acres for the Project) basis, using all of the proposed neighborhood parks and half of the proposed community park land in the project. Recreation costs were allocated on a per housing unit basis.

Annual park maintenance costs allocated to the Project are estimated at \$85,100 at build-out. Costs for recreation services total \$54 per housing unit. Using this multiplier, results in recreation costs of \$151,500 for the Project (refer to Table A-18).

II.5.4.14.6 Net Fiscal Impact

Utilizing the previously mentioned methodologies estimated net fiscal impacts are presented in Tables O.6. As previously mentioned, all values are in 2004 dollars. No annual adjustments to revenues or costs were utilized. The estimated annual flows of costs and revenues are primarily related to the estimated project absorption and street maintenance schedules.

Table 6 presents the results of the fiscal impact associated with the Project. Fiscal revenues range from \$472,700 in the first year of development (2005) to \$4,355,700 at build-out (2018). Fiscal expenditures range from \$490,700 in year one to \$4,000,500 at build-out. The net fiscal impact from developing the Project is negative in year one (\$17,900 loss) and does not become positive until 2014 (\$69,200). At build-out, the net fiscal impact is estimated to be \$355,100. Using a net interest rate of two percent (interest minus inflation), the project has a positive total impact, even including the negative impact years, from the year 2018 on.

Table O.6
Net Fiscal Impact of the Project
On The City Of Chula Vista

Revenue Sources	Revenues (In Thousands)													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Secured Property Tax	\$193.5	\$386.9	\$597.4	\$807.9	\$1,016.0	\$1,209.5	\$1,336.0	\$1,378.4	\$1,420.8	\$1,463.2	\$1,505.6	\$1,548.0	\$1,590.4	\$1,598.9
Unsecured Property Tax	\$6.2	\$12.5	\$20.8	\$29.2	\$37.2	\$43.5	\$49.7	\$55.9	\$62.2	\$68.4	\$74.7	\$80.9	\$87.1	\$88.4
Property Transfer Tax	\$12.8	\$25.5	\$38.9	\$52.3	\$65.6	\$78.4	\$86.2	\$87.8	\$89.4	\$90.9	\$92.5	\$94.1	\$95.7	\$96.0
Sales & Use Tax	\$166.5	\$333.1	\$524.6	\$716.1	\$904.1	\$1,070.6	\$1,192.9	\$1,260.0	\$1,327.0	\$1,394.1	\$1,461.2	\$1,528.3	\$1,595.4	\$1,608.8
Franchise Tax	\$18.2	\$36.5	\$67.3	\$98.2	\$127.3	\$145.5	\$156.0	\$156.8	\$157.6	\$158.5	\$159.3	\$160.1	\$160.9	\$161.1
TOT Tax	\$4.0	\$7.9	\$12.4	\$16.8	\$21.2	\$25.1	\$28.5	\$31.2	\$33.9	\$36.6	\$39.2	\$41.9	\$44.6	\$45.1
Utility Tax	\$32.3	\$64.6	\$104.5	\$144.4	\$183.2	\$215.5	\$243.1	\$264.8	\$286.5	\$308.1	\$329.8	\$351.5	\$373.2	\$377.5
Business License	\$11.7	\$23.5	\$39.3	\$55.2	\$70.4	\$82.2	\$93.9	\$105.7	\$117.4	\$129.1	\$140.9	\$152.6	\$164.4	\$166.7
Miscellaneous Revenues	\$27.5	\$55.0	\$84.0	\$113.0	\$141.8	\$169.3	\$186.5	\$190.8	\$195.1	\$199.4	\$203.7	\$208.0	\$212.3	\$213.2
TOTAL REVENUES	\$472.7	\$945.5	\$1,489.3	\$2,033.1	\$2,566.8	\$3,039.5	\$3,372.8	\$3,531.4	\$3,689.9	\$3,848.4	\$4,006.9	\$4,165.4	\$4,324.0	\$4,355.7
Expenditure Sources	Expenditures (In Thousands)													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Government Admin.	\$101.9	\$204.0	\$324.3	\$441.1	\$561.1	\$668.0	\$735.8	\$755.9	\$770.2	\$784.6	\$798.9	\$813.3	\$827.7	\$830.5
Planning	\$12.8	\$25.7	\$39.7	\$53.7	\$67.5	\$80.4	\$89.0	\$92.4	\$95.8	\$99.1	\$102.5	\$105.9	\$109.3	\$109.9
Police	\$198.1	\$396.2	\$631.6	\$866.9	\$1,096.9	\$1,295.1	\$1,421.2	\$1,457.6	\$1,494.0	\$1,530.4	\$1,566.7	\$1,603.1	\$1,639.5	\$1,646.7
Fire	\$81.3	\$162.6	\$255.7	\$348.7	\$440.1	\$521.4	\$571.7	\$583.1	\$594.6	\$606.1	\$617.5	\$629.0	\$640.5	\$642.7
Library	\$50.3	\$100.6	\$150.9	\$201.2	\$251.4	\$301.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7
Public Works	\$23.1	\$47.5	\$73.5	\$100.6	\$135.5	\$161.6	\$178.3	\$185.6	\$189.2	\$192.8	\$196.4	\$200.0	\$203.6	\$204.3
Park and Recreation	\$23.1	\$46.2	\$86.3	\$112.4	\$150.2	\$189.4	\$218.3	\$236.6	\$236.6	\$236.6	\$236.6	\$236.6	\$236.6	\$236.6
TOTAL EXPENDITURES	\$490.7	\$982.9	\$1,561.9	\$2,124.5	\$2,702.8	\$3,217.6	\$3,544.0	\$3,640.8	\$3,710.0	\$3,779.2	\$3,848.3	\$3,917.5	\$3,986.7	\$4,000.5
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL REVENUES	\$472.7	\$945.5	\$1,489.3	\$2,033.1	\$2,566.8	\$3,039.5	\$3,372.8	\$3,531.4	\$3,689.9	\$3,848.4	\$4,006.9	\$4,165.4	\$4,324.0	\$4,355.7
TOTAL EXPENDITURES	\$490.7	\$982.9	\$1,561.9	\$2,124.5	\$2,702.8	\$3,217.6	\$3,544.0	\$3,640.8	\$3,710.0	\$3,779.2	\$3,848.3	\$3,917.5	\$3,986.7	\$4,000.5
NET FISCAL IMPACT	(\$17.9)	(\$37.4)	(\$72.6)	(\$91.4)	(\$136.0)	(\$178.0)	(\$171.1)	(\$109.4)	(\$20.1)	\$69.2	\$158.6	\$247.9	\$337.3	\$355.1

Source: CIC Research, Inc.

4.1 PUBLIC FACILITY FINANCE

4.1.1 Overview

The City will ensure the appropriate public facilities financing mechanisms are utilized to fund the acquisition, construction and maintenance of public facilities required to support the planned development of the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA project in compliance with the City's Growth Management Program.

Public facilities are generally provided or financed in one of the following three ways:

1. Subdivision Exaction: Developer constructed and financed as a condition of project approval.
2. Development Impact Fee: Funded through the collection of an impact fee. Constructed by the public agency or developer constructed with a reimbursement or credit against specific fees.
3. Debt Financing: Funded using one of several debt finance mechanisms. Constructed by the public agency or developer.

It is anticipated that all three methods will be utilized for the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA project to construct and finance public facilities.

4.1.2 Subdivision Exactions

Neighborhood level public improvements will be developed simultaneously with related residential and non-residential subdivisions. Through the Subdivision Map Act, it is the responsibility of the developer to provide for all local street, utility and recreation improvements. The use of subdivision conditions and exactions, where appropriate, will insure that the construction of neighborhood facilities is timed with actual development.

The imposition of subdivision conditions and exactions does not preclude the use of other public facilities financing mechanisms to finance the public improvement, when appropriate.

4.1.3 Development Impact Fee Programs

Development Impact Fees are imposed by various governmental agencies, consistent with State law, to contribute to the financing of capital facilities improvements within the City of Chula Vista. The distinguishing factor between a fee and a subdivision exaction is that exactions are requested of a specific developer for a specific project whereas fees are levied on all development projects throughout the City or benefit area pursuant to an established formula and in compliance with State law.

Otay Ranch Village 2, 3, and a Portion of Village 4 SPA , through policy decisions of the City of Chula Vista and other governing agencies, is subject to fees established to help defray the cost of facilities that benefit the project and areas beyond this specific project. These fees may include but not be limited to:

1. Eastern Chula Vista TDIF — established to provide financing for circulation element road projects of regional significance in the area east of I-805.
2. Traffic Signal Fee — to pay for traffic signals associated with circulation element streets.
3. Public Facilities Development Impact Fee — Public Facilities DIF established to collect funds for Civic Center Facilities, Police Facilities, Corporation Yard, Libraries, Fire Suppression System, Geographical Information System (GIS), Mainframe Computer, Telephone System Upgrade, Records Management System and Recreation.
4. Park Acquisition and Development Fee — PAD Fee established to pay for the acquisition and development of park facilities.
5. Poggi Canyon Sewer Basin Development Impact Fee — to pay for constructing sewer improvements within the Poggi Canyon basin.
6. Salt Creek Basin Development Impact Fee — to pay for constructing sewer improvements within the Salt Creek basin.
7. Otay Water District Fees — It should be noted that the Water District may require the formation of or annexation to an existing improvement district or creation of some other finance mechanism which may result in specific fees being waived.

4.1.4 Debt Finance Programs

The City of Chula Vista has used assessment districts to finance a number of street improvements, as well as sewer and drainage facilities. Both school districts have implemented Mello-Roos Community Facilities Districts to finance school facilities.

Assessment Districts

Special assessment districts may be proposed for the purpose of acquiring, constructing, maintaining certain public improvements under the Municipal Improvement Act of 1913, the Improvement Bond Act of 1915, the Benefit Assessment Act of 1982, and the Lighting and Landscape Act of 1972. The general administration of the special assessment district is the responsibility of the public agency.

Special assessment financing may be appropriate when the value or benefit of the public facility can be assigned to a specific property. Assessments are levied in specific amounts against each individual property on the basis of relative benefit. Special assessments may be used for both publicly dedicated on-site and off-site improvements and maintenance.

As a matter of policy, the City limits the type of improvements which can be financed by assessment district bonding in residential projects. This policy applies to backbone infrastructure including streets, water, sewer, storm drain, and dry utility systems. Such improvements are generally limited to collector streets and larger street systems serving entire neighborhood areas or larger.

Mello-Roos Community Facilities Act of 1982

The Mello-Roos Community Facilities Act of 1982 authorizes formation of community facilities districts, which impose special taxes to provide the financing of certain public facilities or services. Facilities that can be provided under the Mello-Roos Act include the purchase, construction, expansion, or rehabilitation of the following:

1. Local park, recreation, or parkway facilities;
2. Elementary and secondary school sites and structures;
3. Libraries;
4. Any other governmental facilities that legislative bodies are authorized to construct, own or operate including certain improvements to private property.

Other Methods Used to Finance Facilities

General Fund

The City of Chula Vista's general fund pays for many public services throughout the City. Those facilities and services identified as being funded by general fund sources represent those that will benefit not only the residents of the proposed project, but also Chula Vista residents throughout the City. In most cases, other financing mechanisms are available to initially construct or provide the facility or service, then general fund monies would only be expected to fund the maintenance costs once the facility is accepted by the City.

State and Federal Funding

Although rarely available to fund an entire project. Federal and State financial and technical assistance programs have been available to public agencies, in particular the public school districts.

Dedications

Dedication of sites by developers for public capital facilities is a common financing tool used by many cities. In the case of the project, the following public sites are proposed to be dedicated:

1. Roads (if public)
2. Open space and public trail systems

Homeowners Associations

One or more Community Homeowner Associations may be established by the developer to manage, operate and maintain private facilities and common areas within the project.

Developer Reimbursement Agreements

Certain facilities that are off-site of project and/or provide regional benefits may be constructed in conjunction with the development of the project. In such instances, developer reimbursement agreements will be executed to provide for a future payback to the developer for the additional cost of these facilities. Future developments are required to pay back their fair share of the costs for the shared facility when development occurs.

Special Agreements/Development Agreement

This category includes special development programs for financing construction of Telegraph Canyon Road and State Route 125. It also includes any other special arrangements between the City and the developer such as credits against fees, waiver of fees, or charges for the construction of specific facilities.

A development agreement can play an essential role in the implementation of the Public Facilities Financing Plan. The Public Facilities Financing Plan clearly details all public facility responsibilities and assures that the construction of all necessary public improvements will be appropriately phased with actual development, while the development agreement identifies the obligations and requirements of both parties.

4.1.6 Public Facility Finance Policies

The following finance policies were included and approved with the Growth Management Program to maintain a financial management system that will be implemented consistently when considering future development applications. These policies will enable the City to effectively manage its fiscal resources in response to the demands placed on the City by future growth.

1. Prior to receiving final approval, developers shall demonstrate and guarantee that compliance is maintained with the City's adopted threshold standards.
2. The Capital Improvement Program Budget will be consistent with the goals and objectives of the Growth Management Program. The Capital Improvement Program Budget establishes the timing for funding of all fee related public improvements.
3. The priority and timing of public facility improvements identified in the various City fee programs shall be made at the sole discretion of the City Council.
4. Priority for funding from the City's various fee programs shall be given to those projects which facilitate the logical extension or provision of public facilities as defined in the Growth Management Program.
5. Fee credits, reimbursement agreements, developer agreements or public financing mechanisms shall be considered only when it is in the public interest to use them or these financing methods are needed to rectify an existing facility threshold deficiency. Such action shall not induce growth by prematurely extending or upgrading public facilities.
6. All fee credit arrangements or reimbursement agreements will be made based upon the City's plans for the timing and funding of public facilities contained in the Capital Improvement Program Budget.
7. Public facility improvements made ahead of the City's plans to construct the facilities will result in the need for additional operating and maintenance funds. Therefore all such costs associated with the facility construction shall become the responsibility of the developer until such time as the City had previously planned the facility improvement to be made.

4.1.7 Cumulative Debt

The City of Chula Vista has an established policy limiting the maximum debt to be placed on a residential dwelling unit to an additional one percent above the property tax. This policy was restated in the adopted Growth Management Program.

Like many other cities, Chula Vista has long understood that it is not the only agency that can utilize public finance mechanisms and, therefore, cannot always guarantee that the total debt will remain at or below a maximum of 2 percent. As a result, the City makes an effort to coordinate its debt finance programs with the other special districts (schools and water), which provide service to the residents of Chula Vista to ensure that the cumulative debt does not become excessive. Coordination is also necessary to guarantee all public facilities needed to support a development can be financed and constructed as needed.

Debt capacity is found by totaling the assessed value of residential and commercial/industrial property and applying to this total two percent rate cap established by City policy as can be seen in Table P.1. Subtracting from this total assessed value the value of taxes resulting from application of the effective property tax rate as determined by the County Tax Collector (1.03486%) produces the revenue available from indebtedness that could be placed on the property.

Table P.2. identifies \$33,000,000 as the estimated cost of facilities that may qualify for debt financing. This amount is about the same as the first alternative interest cost and bond term example but greater than any of the other alternative interest cost and bond term examples identified on the following page. Using the alternative of 5.0% net interest cost (NIC) and 30 year bond term applied to a conservative \$2 million in available annual debt service allows for the financing of approximately \$30 million in eligible improvements. Therefore, there appears to be sufficient/insufficient revenue capacity available to finance the improvements listed, although additional analysis will be required at the time of the first utilization of debt financing in the SPA.

The Public Works Department generally requires the preparation of an assessment district feasibility plan for the build-out of a master planned community prior to initiation of the first assessment district in order to determine the debt capacity limits and benefit zones related to using public financing to fund infrastructure improvements.

Table P.1			
Estimated Revenue Available for Debt Service on Land Secured Financings			
Acres	Assessed Value/Unit or Acre	FAR³⁹	Total AV
986 Single Family Units	\$400,000	N/A	\$394,400,000
1800 Multi-Family Units	\$300,000	N/A	\$540,000,000
11.9 Commercial Acres	\$2,300,000	N/A	\$46,000,000
264.4 Industrial Acres	\$2,000,000	N/A	\$528,800,000
Total Assessed Value			\$1,509,200,000
2.0% Tax Rate Cap by City Policy			\$30,184,000
1.0732% Tax Rate Utilized			\$16,196,734
Annual revenue available to pay debt service @ 2.00% - 1.0732%			\$13,987,266

³⁹ Floor Area Ratio. Used as a percentage to calculate building square footage from parcel acreage.

Using \$2 million as a conservative amount available for annual debt service and varying the net interest cost (NIC) and term of bond, the following public facility costs could be funded through a financing vehicle such as Mello-Roos and special assessment districts bonds.

- A 5.0% (NIC) and 30 year term will fund approximately \$31 million.
- A 5.5% (NIC) and 30 year term will fund approximately \$29 million.
- A 6.5% (NIC) and 25 year term will fund approximately \$24 million.
- A 6.5% (NIC) and 20 year term will fund approximately \$22 million.
- A 7.5% (NIC) and 25 year term will fund approximately \$22 million.
- A 7.5% (NIC) and 20 year term will fund approximately \$20 million.

TABLE P.2 Preliminary Estimate of Facilities Cost Potentially Funded from Debt Service⁴⁰		
Facility	Segment	Estimated Costs⁴¹
A.	Heritage Road between Olympic Parkway and Street "D"	\$2,000,000
B.	Heritage Road: Santa Victoria (Street "D") to Santa Lisa (St "F")	\$1,100,000
C.	Heritage Road: Santa Lisa (Street "F") to Street "J" North	\$2,800,000
D.	Heritage Road: Street "J" North to Street "J" South ²	\$2,200,000
E.	Heritage Road: Street "J" South to Main Street	\$1,750,000
F.	Main Street: Heritage Road to connect to existing improvements	\$1,500,000
G.	Santa Victoria (Street "D"): Olympic Parkway to Heritage Rd.	\$3,000,000
H.	Santa Diana (Street "E"): Santa Victoria (Street "D") to State St.	\$2,200,000
I.	La Media Road: Santa Venetia to Birch Road	\$2,000,000
J.	State Street (St. "E"): Santa Victoria (St. "B") to La Media Rd.	\$650,000
K.	La Media Road: Birch Road to Park P-4 Entrance	\$5,800,000
L.	Rock Mountain Rd: East of Heritage Rd and/or Main St within the SPA	\$3,300,000
M.	Santa Victoria (Street "D"): State Street to Heritage Road.	\$3,000,000
N.	Santa Victoria (Street "B"): Santa Venetia to State Street.	\$1,200,000
O.	Santa Victoria (Street "D"): Heritage Road to Santa Diana (Street "E")	\$500,000
Total Costs		\$33,000,000

⁴⁰ Estimate is subject to change based on detailed construction cost estimates

⁴¹ Cost estimates were based on the City of Chula Vistas "Eastern Area Development Impact Fees for Streets, dated July 2002 by Wildan.

4.1.8 Lifecycle Cost

Section 19.09.060 Analysis subsection F(2) of the Growth Management Ordinance requires the following:

"...The inventory shall include Life Cycle Cost ("LCC") projections for each element in 19.09.060(E)...as they pertain to City fiscal responsibility. The LCC projections shall be for estimated life cycle for each element analyzed. The model used shall be able to identify and estimate initial and recurring life cycle costs for the elements..."

Background

The following material presents information on the general aspects of life cycle cost analysis as well as its specific application to the City of Chula Vista operations. The discussion regarding the general benefits and process of LCC is meant to provide a common base of understanding upon which further analysis can take place.

Life cycle costing (LCC) is a method of calculating the total cost of asset ownership over the life span of the asset. Initial costs and all subsequent expected costs of significance are included in the life cycle cost analysis as well as disposal value and any other quantifiable benefits to be derived as a result of owning the asset. Operating and maintenance costs over the life of an asset often times far exceed initial costs and must be factored into the (decision) process.

Life cycle cost analysis should not be used in each and every purchase of an asset. The process itself carries a cost and therefore can add to the cost of the asset. Life Cycle Cost analysis can be justified only in those cases in which the cost of the analysis can be more than offset by the savings derived through the purchase of the asset.

Four major factors which may influence the economic feasibility of applying LCC analysis are:

1. Energy Intensiveness — LCC should be considered when the anticipated energy costs of the purchase are expected to be large throughout its life.
2. Life Expectancy — For assets with long lives (i.e., greater than five years), costs other than purchase price take on added importance. For assets with short lives, the initial costs become a more important factor.
3. Efficiency — The efficiency of operation and maintenance can have significant impact on overall costs. LCC is beneficial when savings can be achieved through reduction of maintenance costs.
4. Investment Cost — As a general rule, the larger the investment the more important LCC analysis becomes.

The four major factors listed above are not, however, necessary ingredients for life cycle cost analysis. A quick test to determine whether life cycle costing would apply to a purchase is to ask whether there are any post-purchase costs associated with it. Life cycle costs are a combination of initial and post-purchase costs.

Applications for LCC Analysis

The City of Chula Vista utilizes the concepts of life cycle cost analysis in determining the most cost effective purchase of capital equipment as well as in the determination of replacement costs for a variety of rolling stock. City staff uses LCC techniques in the preparation of the City's Five Year Capital Improvement Budget (CIP) as well as in the Capital Outlay sections of the annual Operating Budget.

In addition to these existing processes, the City should require the use of LCC analysis prior to or concurrent with the design of public facilities required by new development. Such a requirement will assist in the determination of the most cost effective selection of public facilities.

APPENDIX

A. Fiscal Impact Analysis Tables



APPENDIX A

Table A-1
ABSORPTION SCHEDULE BY LAND USE

Land Use	Per Unit/ Net Acre Value (000's)	Cumulative Developed and Occupied Units/Net Acres														TOTAL
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
SINGLE FAMILY RESIDENTIAL UNITS	\$400	150	300	450	600	750	900	986	986	986	986	986	986	986	986	986
MULTI-FAMILY RESIDENTIAL UNITS (Includes Multi-use Residential)	\$300	275	550	825	1100	1375	1650	1800	1800	1800	1800	1800	1800	1800	1800	1800
INDUSTRIAL ACRES	\$2,000	20	40	60	80	100	120	140	160	180	200	220	240	260	264	264
COMMERCIAL ACRES (Includes Multi-use Commercial)	\$2,300	0	0	7	14	20	20	20	20	20	20	20	20	20	20	20

Table A-2
ASSESSED VALUE

Land Use	Per Unit/ Net Acre Value (000's)	Cumulative Assessed Value(000's)															
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTAL	
SINGLE FAMILY RESIDENTIAL UNITS	\$400	\$ 60,000	\$ 120,000	\$ 180,000	\$ 240,000	\$ 300,000	\$ 360,000	\$ 394,400	\$ 394,400	\$ 394,400	\$ 394,400	\$ 394,400	\$ 394,400	\$ 394,400	\$ 394,400	\$ 394,400	
MULTI FAMILY RESIDENTIAL UNITS	\$300	\$ 82,500	\$ 165,000	\$ 247,500	\$ 330,000	\$ 412,500	\$ 495,000	\$ 540,000	\$ 540,000	\$ 540,000	\$ 540,000	\$ 540,000	\$ 540,000	\$ 540,000	\$ 540,000	\$ 540,000	
INDUSTRIAL ACRES	\$2,000	\$ 40,000	\$ 80,000	\$ 120,000	\$ 160,000	\$ 200,000	\$ 240,000	\$ 280,000	\$ 320,000	\$ 360,000	\$ 400,000	\$ 440,000	\$ 480,000	\$ 520,000	\$ 528,000	\$ 528,800	
COMMERCIAL ACRES	\$2,300	\$ -	\$ -	\$ 16,100	\$ 32,200	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	\$ 46,000	

Table A-3
Secured Property Tax Revenue (000s)

SECURED PROPERTY TAX REVENUES	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018														
TOTAL OTAY RANCH VILLAGE 2																												
Total Assessed Values	\$	182,500	\$	365,000	\$	563,600	\$	762,200	\$	958,500	\$	1,141,000	\$	1,260,400	\$	1,300,400	\$	1,340,400	\$	1,380,400	\$	1,420,400	\$	1,460,400	\$	1,500,400	\$	1,508,400
Tax Rate	1.0%	\$1,825	\$3,650	\$5,636	\$7,622	\$9,585	\$11,410	\$12,604	\$13,004	\$13,404	\$13,804	\$14,204	\$14,604	\$15,004	\$15,084													
TOTAL CHULA VISTA SHARE*	10.6%	\$193.5	\$386.9	\$597.4	\$807.9	\$1,016.0	\$1,209.5	\$1,336.0	\$1,378.4	\$1,420.8	\$1,463.2	\$1,505.6	\$1,548.0	\$1,590.4	\$1,598.9													

Table A-4

UNSECURED PROPERTY TAX	Tax Per Acre	Unsecured Property Tax Revenue (000's)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Industrial Uses	\$312	\$6.2	\$12.5	\$18.7	\$25.0	\$31.2	\$37.4	\$43.7	\$49.9	\$56.2	\$62.4	\$68.6	\$74.9	\$81.1	\$82.4
Commercial Uses	\$301	\$0.0	\$0.0	\$2.1	\$4.2	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0
TOTAL OTAY RANCH VILLAGE 2		\$6.2	\$12.5	\$20.8	\$29.2	\$37.2	\$43.5	\$49.7	\$55.9	\$62.2	\$68.4	\$74.7	\$80.9	\$87.1	\$88.4

* Derived from discussions with the County Assessors Office and the City of Chula Vista (According to the Master Tax Agreement between the City of Chula Vista and the County, 41% of the County's general, library and flood control funds would go to the ci

Table A-5
ESTIMATED PROPERTY TRANSFER TAX REVENUES

Single Family Resale Ratio	0.00007857														
Commercial Resale Ratio	0.00003929														
Product	Resale Rate (Years)	Property Transfer Tax (000s)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Single Family Units	7	\$4.7	\$9.4	\$14.1	\$18.9	\$23.6	\$28.3	\$31.0	\$31.0	\$31.0	\$31.0	\$31.0	\$31.0	\$31.0	\$31.0
Multi Family Units	7	\$6.5	\$13.0	\$19.4	\$25.9	\$32.4	\$38.9	\$42.4	\$42.4	\$42.4	\$42.4	\$42.4	\$42.4	\$42.4	\$42.4
Commercial/Industrial Acres	14	\$1.6	\$3.1	\$5.3	\$7.6	\$9.7	\$11.2	\$12.8	\$14.4	\$16.0	\$17.5	\$19.1	\$20.7	\$22.2	\$22.6
TOTAL OTAY RANCH VILLAGE 2		\$12.8	\$25.5	\$38.9	\$52.3	\$65.6	\$78.4	\$86.2	\$87.8	\$89.4	\$90.9	\$92.5	\$94.1	\$95.7	\$96.0

Table A-6
ESTIMATED SALES TAX REVENUES

2003 Budget															
For Sales Tax	\$20,353,998														
Land Use	Sales Tax Per Unit/Acre (000s)	City of Chula Vista's Share of Sales Tax (000s)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$0.234	\$35.1	\$70.2	\$105.3	\$140.4	\$175.5	\$210.6	\$230.7	\$230.7	\$230.7	\$230.7	\$230.7	\$230.7	\$230.7	\$230.7
Total Multi Family Units	\$0.234	\$64.4	\$128.7	\$193.1	\$257.4	\$321.8	\$386.1	\$421.2	\$421.2	\$421.2	\$421.2	\$421.2	\$421.2	\$421.2	\$421.2
Total Industrial Acres	\$3.354	\$67.1	\$134.2	\$201.2	\$268.3	\$335.4	\$402.5	\$469.6	\$536.6	\$603.7	\$670.8	\$737.9	\$805.0	\$872.0	\$885.5
Total Commercial Acres	\$3.570	\$0.0	\$0.0	\$25.0	\$50.0	\$71.4	\$71.4	\$71.4	\$71.4	\$71.4	\$71.4	\$71.4	\$71.4	\$71.4	\$71.4
TOTAL OTAY RANCH VILLAGE 2		\$166.5	\$333.1	\$524.6	\$716.1	\$904.1	\$1,070.6	\$1,192.9	\$1,260.0	\$1,327.0	\$1,394.1	\$1,461.2	\$1,528.3	\$1,595.4	\$1,608.8

Table A-7
ESTIMATED FRANCHISE FEES

2003 Budget
For Franchise Fees \$6,935,040

Land Use	Per Unit	Franchise Fee Revenue (000's)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$41	\$6.2	\$12.3	\$18.5	\$24.6	\$30.8	\$36.9	\$40.4	\$40.4	\$40.4	\$40.4	\$40.4	\$40.4	\$40.4	\$40.4
Total Multi Family Units	\$41	\$11.3	\$22.6	\$33.8	\$45.1	\$56.4	\$67.7	\$73.8	\$73.8	\$73.8	\$73.8	\$73.8	\$73.8	\$73.8	\$73.8
Total Industrial Acres	\$2,523	\$0.8	\$1.6	\$2.5	\$3.3	\$4.1	\$4.9	\$5.7	\$6.6	\$7.4	\$8.2	\$9.0	\$9.8	\$10.7	\$10.8
Total Commercial Acres	\$1,802	\$0.0	\$0.0	\$12.6	\$25.2	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0
TOTAL OTAY RANCH VILLAGE 2		\$18.2	\$36.5	\$67.3	\$98.2	\$127.3	\$145.5	\$156.0	\$156.8	\$157.6	\$158.5	\$159.3	\$160.1	\$160.9	\$161.1

Table A-8
ESTIMATED TRANSIENT OCCUPANCY TAX

2003 Budget
For Transient Occupancy Tax \$2,173,500

Land Use	TOT per Unit/Net Acre	Transient Occupancy Tax (000's)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$3	\$0.5	\$0.9	\$1.4	\$1.8	\$2.3	\$2.7	\$3.0	\$3.0	\$3.0	\$3.0	\$3.0	\$3.0	\$3.0	\$3.0
Total Multi Family Units	\$3	\$0.8	\$1.7	\$2.5	\$3.3	\$4.1	\$5.0	\$5.4	\$5.4	\$5.4	\$5.4	\$5.4	\$5.4	\$5.4	\$5.4
Total Industrial Acres	\$134	\$2.7	\$5.4	\$8.0	\$10.7	\$13.4	\$16.1	\$18.8	\$21.4	\$24.1	\$26.8	\$29.5	\$32.2	\$34.8	\$35.4
Total Commercial Acres	\$70	\$0.0	\$0.0	\$0.5	\$1.0	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4
TOTAL OTAY RANCH VILLAGE 2		\$4.0	\$7.9	\$12.4	\$16.8	\$21.2	\$25.1	\$28.5	\$31.2	\$33.9	\$36.6	\$39.2	\$41.9	\$44.6	\$45.1

Table A-9
ESTIMATED UTILITY TAX

2003 Budget
For Utility Tax \$4,170,600

Land Use	Tax per Unit/Net Acre	Utility Tax Revenue (000's)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$25	\$3.8	\$7.5	\$11.3	\$15.0	\$18.8	\$22.5	\$24.7	\$24.7	\$24.7	\$24.7	\$24.7	\$24.7	\$24.7	\$24.7
Total Multi Family Units	\$25	\$6.9	\$13.8	\$20.6	\$27.5	\$34.4	\$41.3	\$45.0	\$45.0	\$45.0	\$45.0	\$45.0	\$45.0	\$45.0	\$45.0
Total Industrial Acres	\$1,518	\$21.7	\$43.4	\$65.0	\$86.7	\$108.4	\$130.1	\$151.8	\$173.4	\$195.1	\$216.8	\$238.5	\$260.2	\$281.8	\$286.2
Total Commercial Acres	\$1,084	\$0.0	\$0.0	\$7.6	\$15.2	\$21.7	\$21.7	\$21.7	\$21.7	\$21.7	\$21.7	\$21.7	\$21.7	\$21.7	\$21.7
TOTAL OTAY RANCH VILLAGE 2		\$32.3	\$64.6	\$104.5	\$144.4	\$183.2	\$215.5	\$243.1	\$264.8	\$286.5	\$308.1	\$329.8	\$351.5	\$373.2	\$377.5

Table A-10
ESTIMATED BUSINESS LICENSE REVENUE

2003 Budget
For Business License Tax \$1,057,417

Land Use	Average Business License Fee Per Acre	Business License Fees (000's)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Industrial Acres	\$319	\$11.7	\$23.5	\$35.2	\$47.0	\$58.7	\$70.4	\$82.2	\$93.9	\$105.7	\$117.4	\$129.1	\$140.9	\$152.6	\$155.0
Total All Commercial Acres	\$587	\$0.0	\$0.0	\$4.1	\$8.2	\$11.7	\$11.7	\$11.7	\$11.7	\$11.7	\$11.7	\$11.7	\$11.7	\$11.7	\$11.7
TOTAL OTAY RANCH VILLAGE 2		\$11.7	\$23.5	\$39.3	\$55.2	\$70.4	\$82.2	\$93.9	\$105.7	\$117.4	\$129.1	\$140.9	\$152.6	\$164.4	\$166.7

Table A-11
ESTIMATED MISCELLANEOUS REVENUES

2003 Budget	Allocation of Budget				Per House Unit	Per Comm. Acre	Per Industrial Acre								
	Total Budget	Residential	Commercial	Industrial											
Animal License	\$96,614	\$96,614			\$1.55										
Bicycle License	\$0	\$0			\$0.00										
Motor Vehicle Licenses	\$0	\$0			\$0.00										
State HOPTR	\$0	\$0			\$0.00										
Gas Tax	\$2,559,533	\$2,239,591	\$243,156	\$76,786	\$35.83	\$173.1	\$105.4								
Library Fines	\$170,000	\$170,000			\$2.72										
Parking Citations	\$312,995	\$234,746	\$59,469	\$18,780	\$3.76	\$42.3	\$25.8								
Charges for Current Services															
Swimming Pools	\$0	\$0			\$0.00										
Recreation Program	\$668,907	\$668,907			\$10.70										
Park Reservation Fees	\$0	\$0			\$0.00										
Other Park & Recr. Fees	\$0	\$0			\$0.00										
Total Misc. Revenue	\$3,808,049	\$3,409,859	\$302,625	\$95,566											
	Per Unit/Acre				\$54.56	\$215.48	\$131.22								
Land Use	Per Unit/Acre	Miscellaneous Revenue (000's)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$54.56	\$8.2	\$16.4	\$24.6	\$32.7	\$40.9	\$49.1	\$53.8	\$53.8	\$53.8	\$53.8	\$53.8	\$53.8	\$53.8	\$53.8
Total Multi Family Units	\$54.56	\$15.0	\$30.0	\$45.0	\$60.0	\$75.0	\$90.0	\$98.2	\$98.2	\$98.2	\$98.2	\$98.2	\$98.2	\$98.2	\$98.2
Total Industrial Acres	\$131.22	\$4.3	\$8.6	\$12.9	\$17.2	\$21.5	\$25.9	\$30.2	\$34.5	\$38.8	\$43.1	\$47.4	\$51.7	\$56.0	\$56.9
Total Commercial Acres	\$215.48	\$0.0	\$0.0	\$1.5	\$3.0	\$4.3	\$4.3	\$4.3	\$4.3	\$4.3	\$4.3	\$4.3	\$4.3	\$4.3	\$4.3
TOTAL OTAY RANCH VILLAGE 2		\$27.5	\$55.0	\$84.0	\$113.0	\$141.8	\$169.3	\$186.5	\$190.8	\$195.1	\$199.4	\$203.7	\$208.0	\$212.3	\$213.2

Table A-12
ESTIMATED EXPENDITURES FOR GOVERNMENT ADMINISTRATION

2003 Budget For Government Administration	\$22,081,645
Land Use	Allocated Cost
All Land Uses	26.2 % of total line operations

Land Use	Government Administration (000's)													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TOTAL OTAY RANCH VILLAGE 2	\$101.9	\$204.0	\$324.3	\$441.1	\$561.1	\$668.0	\$735.8	\$755.9	\$770.2	\$784.6	\$798.9	\$813.3	\$827.7	\$830.5

Table A-13
ESTIMATED PLANNING COST
(Non-Current)

2003 Budget For Planning Expenditures	\$1,750,367	1404.41	0.13556722	9.653E-05	0
		728.29	0.07030159	9.653E-05	168.962335
	Cost per Unit /Net Acre				
Residential	\$22.24				
Industrial	\$168.96				
Commercial	\$168.96				

Land Use	Planning Costs (000's)													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$3.3	\$6.7	\$10.0	\$13.3	\$16.7	\$20.0	\$21.9	\$21.9	\$21.9	\$21.9	\$21.9	\$21.9	\$21.9	\$21.9
Total Multi Family Units	\$6.1	\$12.2	\$18.3	\$24.5	\$30.6	\$36.7	\$40.0	\$40.0	\$40.0	\$40.0	\$40.0	\$40.0	\$40.0	\$40.0
Total Industrial Acres	\$3.4	\$6.8	\$10.1	\$13.5	\$16.9	\$20.3	\$23.7	\$27.0	\$30.4	\$33.8	\$37.2	\$40.6	\$43.9	\$44.6
Total Commercial Acres	\$0.0	\$0.0	\$1.2	\$2.4	\$3.4	\$3.4	\$3.4	\$3.4	\$3.4	\$3.4	\$3.4	\$3.4	\$3.4	\$3.4
TOTAL OTAY RANCH VILLAGE 2	\$12.8	\$25.7	\$39.7	\$53.7	\$67.5	\$80.4	\$89.0	\$92.4	\$95.8	\$99.1	\$102.5	\$105.9	\$109.3	\$109.9

Table A-14
ESTIMATED POLICE PROTECTION COST

2003 Budget For
Police Expenditures \$32,580,130

Cost per
Unit/Net Acre
Residential \$380.57
Industrial \$1,819
Commercial \$5,319

Land Use	Police Protection Costs (000's)													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$57.1	\$114.2	\$171.3	\$228.3	\$285.4	\$342.5	\$375.2	\$375.2	\$375.2	\$375.2	\$375.2	\$375.2	\$375.2	\$375.2
Total Multi Family Units	\$104.7	\$209.3	\$314.0	\$418.6	\$523.3	\$627.9	\$685.0	\$685.0	\$685.0	\$685.0	\$685.0	\$685.0	\$685.0	\$685.0
Total Industrial Acres	\$36.4	\$72.7	\$109.1	\$145.5	\$181.9	\$218.2	\$254.6	\$291.0	\$327.3	\$363.7	\$400.1	\$436.4	\$472.8	\$480.1
Total Commercial Acres	\$0.0	\$0.0	\$37.2	\$74.5	\$106.4	\$106.4	\$106.4	\$106.4	\$106.4	\$106.4	\$106.4	\$106.4	\$106.4	\$106.4
TOTAL OTAY RANCH VILLAGE 2	\$198.1	\$396.2	\$631.6	\$866.9	\$1,096.9	\$1,295.1	\$1,421.2	\$1,457.6	\$1,494.0	\$1,530.4	\$1,566.7	\$1,603.1	\$1,639.5	\$1,646.7

Table A-15
ESTIMATED FIRE PROTECTION COST

2003 Budget For
Fire Expenditures \$10,271,309

Cost per Unit
/Net Acre
Residential \$164.34
Industrial \$573
Commercial \$1,677

Land Use	Fire Protection Costs (000's)													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$24.7	\$49.3	\$74.0	\$98.6	\$123.3	\$147.9	\$162.0	\$162.0	\$162.0	\$162.0	\$162.0	\$162.0	\$162.0	\$162.0
Total Multi Family Units	\$45.2	\$90.4	\$135.6	\$180.8	\$226.0	\$271.2	\$295.8	\$295.8	\$295.8	\$295.8	\$295.8	\$295.8	\$295.8	\$295.8
Total Industrial Acres	\$11.5	\$22.9	\$34.4	\$45.9	\$57.3	\$68.8	\$80.3	\$91.7	\$103.2	\$114.7	\$126.1	\$137.6	\$149.1	\$151.4
Total Commercial Acres	\$0.0	\$0.0	\$11.7	\$23.5	\$33.5	\$33.5	\$33.5	\$33.5	\$33.5	\$33.5	\$33.5	\$33.5	\$33.5	\$33.5
TOTAL OTAY RANCH VILLAGE 2	\$81.3	\$162.6	\$255.7	\$348.7	\$440.1	\$521.4	\$571.7	\$583.1	\$594.6	\$606.1	\$617.5	\$629.0	\$640.5	\$642.7

Table A-16
ESTIMATED LIBRARY COST

2003 Budget For	
Library Expenditures	<u>\$7,395,347</u>
	Cost per
	<u>Unit/Net Acre</u>
Residential	\$118.33
Commercial	\$0

Land Use	Library Costs (000's)													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Family Units	\$17.7	\$35.5	\$53.2	\$71.0	\$88.7	\$106.5	\$116.7	\$116.7	\$116.7	\$116.7	\$116.7	\$116.7	\$116.7	\$116.7
Total Multi Family Units	\$32.5	\$65.1	\$97.6	\$130.2	\$162.7	\$195.2	\$213.0	\$213.0	\$213.0	\$213.0	\$213.0	\$213.0	\$213.0	\$213.0
Total Commercial/Industrial Acres	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL OTAY RANCH VILLAGE 2	\$50.3	\$100.6	\$150.9	\$201.2	\$251.4	\$301.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7	\$329.7

2003 Budget For		Cost Allocation Unit/Acre	
Public Works	\$16,798,725	Residential	Commercial/Industrial
Operations			
Administration	\$1,656,815	\$23.69	\$179.97
Traffic Operations	\$801,733	\$593.44	per lane mile
Street Maintenance	\$1,767,339	\$1,308.17	per lane mile (1)
Street Sweeping	\$295,968	\$199.11	per lane mile
Street Tree Maintenance	\$859,876	\$383.56	per street mile
Wastewater Maintenance	\$168,271	self supporting	
Wastewater Lift Station Maint.	\$3,717,689	self supporting	
Engineering			
Traffic Signal Maint.			
Signal costs	\$573,119	\$4.036	per signal
Street light costs	\$859,678	\$136	per street light
Transit Service Operations	\$180,655	self supporting	
Environmental Mgmt	\$164,207	self supporting	

	Public Works Expenditures (000's)															
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTAL	
Public Street Lane Miles *	6.0	13.0	20.0	28.0	35.0	42.0	46.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	
Public Street Miles *	2.0	4.0	6.0	9.0	11.0	13.0	14.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	
Street Lights**	29	61	96	130	164	196	218	226.0	226.0	226.0	226.0	226.0	226.0	226.0	226	
Signals**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operations Admin.	\$ 13.7	\$ 27.3	\$ 42.3	\$ 57.2	\$ 71.9	\$ 85.6	\$ 94.8	\$ 98.4	\$ 102.0	\$ 105.6	\$ 109.2	\$ 112.8	\$ 116.4	\$ 117.1		
Street Mile Costs	\$ 0.8	\$ 1.5	\$ 2.3	\$ 3.5	\$ 4.2	\$ 5.0	\$ 5.4	\$ 5.8	\$ 5.8	\$ 5.8	\$ 5.8	\$ 5.8	\$ 5.8	\$ 5.8		
Lane Mile Costs	\$ 4.8	\$ 10.3	\$ 15.9	\$ 22.2	\$ 27.7	\$ 33.3	\$ 36.5	\$ 38.0	\$ 38.0	\$ 38.0	\$ 38.0	\$ 38.0	\$ 38.0	\$ 38.0		
Street Maint.***	\$ -	\$ -	\$ -	\$ -	\$ 9.2	\$ 11.0	\$ 12.0	\$ 12.6	\$ 12.6	\$ 12.6	\$ 12.6	\$ 12.6	\$ 12.6	\$ 12.6		
Signal/street light costs	\$ 4.0	\$ 8.3	\$ 13.1	\$ 17.7	\$ 22.4	\$ 26.7	\$ 29.7	\$ 30.8	\$ 30.8	\$ 30.8	\$ 30.8	\$ 30.8	\$ 30.8	\$ 30.8		
TOTAL OTAY RANCH VILLAGE 2	\$ 23.1	\$ 47.5	\$ 73.5	\$ 100.6	\$ 135.5	\$ 161.6	\$ 178.3	\$ 185.6	\$ 189.2	\$ 192.8	\$ 196.4	\$ 200.0	\$ 203.6	\$ 204.3		

***Represent a 15 year annual average during the period from 2004 to 2017

Table A-18
ESTIMATED EXPENDITURES FOR PARK AND RECREATIONS

Estimated Park Development Schedule		Park Acres													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
		0	0	7.4	8.7	15.1	22.1	29.1	37.05	37.05	37.05	37.05	37.05	37.05	37.05
2003 Budget For															
Park & Recreation	\$5,644,290	Cost Allocation Unit/Acre													
Parks, Recreation and Open Space	\$5,644,290														
Parks	\$3,922,481	\$2,296	per park acre												
Administration - Parks	\$385,488														
Administration - Open Space	\$334,552	provided by lighting and landscape district													
Maintenance	\$3,202,441														
General	\$2,147,445														
Marina Park	\$271,425	Not Applicable													
Recreation	\$3,399,284	\$54.39	per housing unit												
Administration- Recreation	\$139,266	\$2.23	per housing unit												
Swimming & Sports	\$911,781	\$14.59	per housing unit												
Senior and youth Services	\$372,094	\$5.95	per housing unit												
Recreation Facilities	\$1,976,142	\$31.62	per housing unit												
		Park and Recreations(000's)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Park		\$0.0	\$0.0	\$17.0	\$20.0	\$34.7	\$50.7	\$66.8	\$85.1	\$85.1	\$85.1	\$85.1	\$85.1	\$85.1	\$85.1
Recreation		\$23.1	\$46.2	\$69.3	\$92.5	\$115.6	\$138.7	\$151.5	\$151.5	\$151.5	\$151.5	\$151.5	\$151.5	\$151.5	\$151.5
TOTAL OTAY RANCH VILLAGE 2		\$23.1	\$46.2	\$86.3	\$112.4	\$150.2	\$189.4	\$218.3	\$236.6	\$236.6	\$236.6	\$236.6	\$236.6	\$236.6	\$236.6